As filed with the Securities and Exchange Commission on February 16, 2006

Registration No. 333-130759

**SECURITIES AND EXCHANGE COMMISSION**
**Washington, D.C. 20549**

**AMENDMENT NO. 1**
**TO**
# FORM S-1
**REGISTRATION STATEMENT**
**UNDER**
**THE SECURITIES ACT OF 1933**

# Vanda Pharmaceuticals Inc.

*(Exact Name of Registrant as Specified in its Charter)*

| **Delaware** | **2834** | **03-0491827** |
|---|---|---|
| *(State or Other Jurisdiction of Incorporation or Organization)* | *(Primary Standard Industrial Classification Code Number)* | *(I.R.S. Employer Identification Number)* |

**9605 Medical Center Drive**
**Suite 300**
**Rockville, Maryland 20850**
**(240) 599-4500**
*(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)*

**Mihael H. Polymeropoulos, M.D.**
**Chief Executive Officer**
**9605 Medical Center Drive**
**Suite 300**
**Rockville, Maryland 20850**
**(240) 599-4500**
*(Name, address, including zip code, and telephone number, including area code, of agent for service)*

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

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

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

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

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

**CALCULATION OF REGISTRATION FEE**

| Title of Each Class of Securities to be Registered | Proposed Maximum Aggregate Offering Price(1),(2) | Amount of Registration Fee(3) |
|---|---|---|
| Common stock, $0.01 par value | $75,000,000 | $0 |

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

(2) Includes offering price of shares that the underwriters have the option to purchase to cover over-allotments, if any.

(3) A registration fee of $8,025.00 was paid at the time of the initial filing of this registration statement based on an estimate of the aggregate offering price.

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

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The information in this 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 prospectus is not an offer to sell these securities, and we are not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

**Subject to completion, dated , 2006**

**Prospectus**

*shares*


# *Common shares*

This is our initial public offering of common shares. We are offering shares. The estimated initial public offering price is between $ and $ per share.

Currently, no public market exists for our common shares. We have applied to list our common shares on the Nasdaq National Market under the symbol VNDA.

| | Per share | Total |
|---|---|---|
| Initial public offering price | $ | $ |
| Underwriting discounts and commissions | $ | $ |
| Proceeds to us, before expenses | $ | $ |

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

**Investing in our common shares involves a high degree of risk. See “Risk factors” beginning on page 8.**

**Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed on the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.**

**JPMorgan** **Banc of America Securities LLC**

**Thomas Weisel Partners LLC**

, 2006

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

For investors outside the United States: Neither we nor any of the underwriters have done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States. You are required to inform yourselves about and to observe any restrictions relating to this offering and the distribution of this prospectus.



Unless the context otherwise requires, we use the terms "Vanda," the "company," "we," "us" and "our" in this prospectus to refer to Vanda Pharmaceuticals Inc.

# Prospectus summary

*This summary highlights the most important features of this offering and the information contained elsewhere in this prospectus. This summary is not complete and does not contain all of the information that you should consider before investing in our common stock. You should read the entire prospectus carefully, especially the risks of investing in our common stock discussed under "Risk Factors" and our consolidated financial statements and related notes included in this prospectus.*

**Vanda Pharmaceuticals Inc.**

We are a biopharmaceutical company focused on the development and commercialization of our portfolio of clinical-stage product candidates for central nervous system disorders. We believe that each of these product candidates will address a large market with significant unmet medical needs by offering advantages relative to currently available therapies. Our product portfolio includes:

- iloperidone, a compound for the treatment of schizophrenia and bipolar disorder, which we are currently evaluating in a Phase III trial for schizophrenia that we anticipate will be completed in the first half of 2007
- VEC-162, a compound for the treatment of insomnia and depression, which we are currently evaluating in a Phase III trial for insomnia and which is also ready for Phase II trials for depression
- VSF-173, a compound for the treatment of excessive sleepiness, for which we expect to begin a Phase II trial in the second half of 2006

We hold exclusive, worldwide rights to these compounds and plan to develop a focused U.S. sales force for the commercialization of iloperidone and VSF-173. Given the large size of the prescribing physician base for insomnia and depression, we plan to partner with a global pharmaceutical company for the development and commercialization of VEC-162 worldwide, although we have not yet identified such a partner.

Our founder and Chief Executive Officer, Mihael H. Polymeropoulos, M.D., commenced our operations early in 2003 after establishing and leading the Pharmacogenetics Department at Novartis AG. In acquiring and developing our compounds we have relied upon our deep expertise in the scientific disciplines of pharmacogenetics and pharmacogenomics. These scientific disciplines examine both genetic variations among people that influence response to a particular drug, and the multiple pathways through which drugs affect people. We believe that the combination of our expertise in these disciplines and our drug development expertise will provide us with preferential access to compounds discovered by other pharmaceutical companies, and may allow us to identify new uses for these compounds. These capabilities should also enable us to shorten the time it takes to commercialize a drug when compared to traditional approaches.

*Iloperidone for Schizophrenia and Bipolar Disorder.* We are developing iloperidone for the treatment of schizophrenia and bipolar disorder. Today, schizophrenia patients are primarily treated with drugs known as "atypical" antipsychotics, which have been called "atypical" because they are regarded as being safer and more effective than drugs known as "typical" antipsychotics, which have been prescribed since the 1950s. Atypical antipsychotics achieved worldwide sales in excess of $13 billion in 2004. However, despite their commercial success,

atypical antipsychotics offer only modest and unpredictable efficacy and induce serious side effects, resulting in poor patient compliance. Consequently, there remains a high degree of dissatisfaction with atypical antipsychotics among patients and physicians. A recent study conducted by the National Institute of Mental Health and published in *The New England Journal of Medicine* found that 74% of patients taking antipsychotics discontinued treatment within 18 months. Given the safety and efficacy shortcomings of current drugs, we believe that iloperidone may be an attractive alternative therapy.

In three short-term and three long-term trials comprising over 2,000 patients, an oral formulation of iloperidone differentiated itself from currently available atypical antipsychotics by demonstrating a number of reduced side effects. These reduced side effects included low weight gain, no induction of diabetes, low extrapyramidal symptoms (involuntary body movements), including no akathisia (inability to sit still), no hyperprolactinemia (an elevated secretion of the hormone prolactin which can lead to sexual dysfunction, breast development and milk secretion in men and women), low incidence of sleepiness and low negative effects on cognition relative to placebo.

We are also differentiating iloperidone from currently available therapies through the development of an extended-release injectable formulation which is administered only once every four weeks. We believe this formulation will help address the patient compliance and discontinuation problems commonly associated with atypical antipsychotics and will become a compelling complement to our oral formulation. Our extended-release injectable formulation has successfully completed a Phase I/IIa trial.

We are further differentiating iloperidone through the application of our pharmacogenetics and pharmacogenomics expertise, by identifying genetic markers that may enable physicians to tailor their prescribing of iloperidone to certain patients. We have determined that patients with a common genetic mutation, estimated to occur in approximately 70% of the population, may be more likely to experience better treatment results with iloperidone than other patients. Our market research indicates that physicians treating schizophrenia patients would welcome a test that could detect this mutation and may prescribe iloperidone more frequently as a result. We have also discovered that patients with an uncommon genetic attribute may experience longer QTc intervals (a measurement of specific electrical activity in the heart as captured on an electrocardiogram, corrected for heart rate) while taking iloperidone.

We initiated a Phase III trial in November 2005 to evaluate iloperidone for the treatment of patients with schizophrenia. The trial is a randomized, double-blind, placebo- and active-controlled Phase III trial of approximately 600 patients with schizophrenia. Based on discussions with the United States Food and Drug Administration, or FDA, we believe that if this trial is successful our data and documentation on oral iloperidone will be sufficient to support the filing of a New Drug Application, or NDA, with the FDA. We expect the Phase III trial to be completed in the first half of 2007.

In addition to schizophrenia, we believe iloperidone may be effective in treating bipolar disorder. Most of the approved atypical antipsychotics have received approval for bipolar disorder subsequent to commercialization for the treatment of schizophrenia. Iloperidone is ready for an initial Phase II trial in bipolar disorder.

We expect to build our own sales force to market iloperidone directly to psychiatrists and other target physicians in the U.S. This medical community is relatively small and we believe that we can cost-effectively develop such a sales force. Outside of the U.S., we expect to find commercial partners for iloperidone.

*VEC-162 for Insomnia and Depression.* VEC-162 is an oral compound currently in a Phase III trial for the treatment of insomnia. The market for sleep disorder drugs is large and growing, with over $3.5 billion of worldwide sales in 2004. Industry sources estimate that of the 73 million U.S. adults who suffer from some form of insomnia, only approximately 11 million currently receive treatment.

We believe VEC-162 may offer several benefits when compared to currently approved insomnia therapies. Unlike many approved therapies, VEC-162 works by directly targeting the melatonin receptors in the brain which govern the body's natural sleep/wake cycle, and appears to offer a benefit in both sleep onset, or time to fall asleep, and sleep maintenance, or ability to stay asleep. VEC-162 also appears to be safe, with no significant side effects or effects on next-day performance. We believe that VEC-162 is also unlikely to be classified as a Schedule IV controlled substance by the United States Drug Enforcement Agency (DEA) because a recently approved compound with a similar mechanism of action has been shown not to have potential for abuse. In addition, because it appears to modulate the sleep/ wake cycle, we believe that VEC-162 may be the first drug to address the underlying cause of sleeplessness in circadian rhythm sleep disorders, which, according to research conducted by LEK Consulting, LLC, a leading consulting firm, represent a significant portion of the insomnia market. Circadian rhythm sleep disorders are those, such as jet lag, where the circadian rhythm, or the rhythmic output of the human biological clock governed by melatonin and other hormones, is out of alignment with a person's daily activities or lifestyle.

We recently completed a randomized, double-blind, multi-center, placebo-controlled Phase II trial evaluating the effect of VEC-162 on sleep in healthy volunteers with induced transient insomnia. The drug demonstrated statistically significant improvement in several parameters used to measure the efficacy of insomnia therapies, including reduced duration of wake after sleep onset, improved sleep efficiency and shortened time to persistent sleep. In addition, VEC-162 demonstrated a statistically significant shift in patients' circadian rhythm and a placebo-like side effect profile.

In addition to insomnia, we believe that VEC-162 may be effective in treating depression. VEC-162 has properties similar to agomelatine, an older compound with a similar mechanism of action, which in a Phase III trial demonstrated more rapid efficacy and reduced side effects when compared to a market-leading antidepressant. VEC-162 is ready for Phase II trials in depression, having demonstrated an antidepressant effect in animal models and having completed several Phase I trials.

*VSF-173 for Excessive Sleepiness.* VSF-173 is an oral compound that has demonstrated effects on animal sleep/ wake patterns and gene expression suggestive of a stimulant effect. As a result of these observations and safety data from previous human trials, we are planning to initiate a Phase II trial of VSF-173 in excessive sleepiness in late 2006. Excessive sleepiness is a rapidly growing market which is estimated to be approximately $440 million worldwide and is currently treated primarily by stimulants.

**Strategy**

Our goal is to create a leading biopharmaceutical company focused on developing and commercializing products that address critical unmet medical needs through the application of

our drug development and pharmacogenomics and pharmacogenetics expertise. The key elements of our strategy to accomplish this goal are to:

- pursue the clinical development of our current product candidates
- develop a focused commercialization capability in the United States
- enter into strategic partnerships to extend our commercial reach
- apply our pharmacogenomics and pharmacogenetics expertise to differentiate our products from other available products
- expand our product portfolio through the acquisition of additional clinical compounds

**Risks associated with our business**

Our business is subject to numerous risks, as more fully described in the section entitled “Risk factors” immediately following this prospectus summary. We may be unable, for many reasons, including those that are beyond our control, to implement our current business strategy. Those reasons could include delays in obtaining, or a failure to obtain, regulatory approval for our product candidates, a failure to maintain and to protect our intellectual property, our failure to meet certain development and commercialization milestones in our sublicense agreement with Novartis AG, which could cause our rights to iloperidone to be terminated, the exercise by Bristol-Myers Squibb Company of its option to reacquire our rights to VEC-162 at the end of our Phase III program (if we have not entered into a development and commercialization agreement with a third party covering significant markets by that time) and the exercise by Novartis of its option to reacquire rights to VSF-173 at the end of our Phase II trials or at the end of our Phase III trials. We have a limited operating history and have incurred net losses from our inception. We expect to continue to generate operating losses for the next several years. We will need to obtain additional capital to fund our continuing research and development activities. All of our product candidates are in development and none have been approved by the FDA for commercial sale. Even if we succeed in developing and commercializing one or more of our product candidates, we may never generate sufficient revenue to achieve and then sustain profitability.

**Corporate information**

We were incorporated in Delaware in November 2002. Our principal executive offices are located at 9605 Medical Center Drive, Suite 300, Rockville, Maryland, 20850 and our telephone number is (240) 599-4500. Our website address is www.vandapharma.com. The information on, or that can be accessed through, our website is not part of this prospectus.

# The offering

| | |
|---|---|
| Common stock we are offering: | shares |
| Common stock to be outstanding after this offering: | shares |

## Use of proceeds

We expect to use the net proceeds of this offering for working capital and for other general corporate purposes, including the funding of our clinical development efforts. See “Use of Proceeds.”

Proposed Nasdaq National Market symbol: VNDA

The number of shares of common stock to be outstanding after the offering is based on 327,535 shares of common stock outstanding as of December 31, 2005, and the assumed conversion of 52,276,437 shares of preferred stock outstanding on December 31, 2005 into common stock in connection with the closing of this offering. Except where we state otherwise, the number of shares of common stock to be outstanding after this offering does not take into account:

- 5,072,457 shares of common stock issuable upon the exercise of stock options outstanding as of December 31, 2005, with a weighted-average exercise price of $0.42 per share
- 166,600 shares of common stock issuable upon exercise of outstanding warrants as of December 31, 2005 with an exercise price of $0.40 per share
- an additional 506,367 shares reserved as of December 31, 2005 for future stock option grants and purchases under our equity compensation plans. (see note 10 of the notes to our consolidated financial statements)

*Finally, except, where we state otherwise, the information we present in this prospectus reflects:*

- *the conversion of all our outstanding preferred stock as of December 31, 2005 into 52,276,437 shares of common stock which will occur immediately prior to this offering*
- *the adoption of our restated certificate of incorporation and restated bylaws to be effective upon the completion of this offering*
- *no exercise of the underwriter’s over-allotment option*

# Summary consolidated financial data

*The following tables summarize our consolidated financial data. The summary consolidated financial data is derived from our audited financial statements for the period from March 13, 2003 (inception) through December 31, 2003, and for the years ended December 31, 2004 and December 31, 2005. This data should be read together with our financial statements and related notes, "Selected Financial Data," and "Management's Discussion and Analysis of Financial Condition and Results of Operations" included elsewhere in this prospectus. The pro forma balance sheet data and pro forma net loss per share data contained in the following tables reflect the automatic conversion of all outstanding shares of our preferred stock into common stock upon completion of this offering. The pro forma as adjusted balance sheet data contained in the following tables reflects the pro forma balance sheet data at December 31, 2005, adjusted for the sale of shares of our common stock in this offering at an assumed initial public offering price of $ per share (the mid-point of the price range set forth on the cover page of this prospectus), after deducting the estimated underwriting discounts, commissions and offering expenses payable by us, and the automatic conversion of all preferred stock into common stock upon completion of this offering.*

| | Period from March 13, 2003 (inception) to December 31, 2003 | Year ended December 31, 2004 | Year ended December 31, 2005 |
|---|---|---|---|
| **Statements of operations data** | | | |
| Revenue | $ 47,565 | $ 33,980 | $ — |
| Operating expenses: | | | |
| Research and development | 2,010,532 | 7,442,983 | 16,890,615 |
| General and administrative | 1,052,659 | 2,119,394 | 7,396,038 |
| Total operating expenses | 3,063,191 | 9,562,377 | 24,286,653 |
| Loss from operations | (3,015,626) | (9,528,397) | (24,286,653) |
| Interest and other income, net | 44,805 | 59,060 | 410,001 |
| Net loss before tax expense | (2,970,821) | (9,469,337) | (23,876,652) |
| Tax expense | — | 4,949 | 7,649 |
| Net loss | (2,970,821) | (9,474,286) | (23,884,301) |
| Beneficial conversion feature— deemed dividend to preferred stockholders(1) | — | — | (33,486,623) |
| Net loss attributable to common stockholders | $ (2,970,821) | $ (9,474,286) | $ (57,370,924) |
| Net loss per share applicable to common stockholders, basic and diluted | $ (297.08) | $ (947.43) | $ (1,019.29) |
| Pro Forma net loss per share applicable to common stockholders, basic and diluted | | | $ (1.93) |
| Shares used in computing net loss per share, basic and diluted | 10,000 | 10,000 | 56,285 |
| Shares used in computing pro forma net loss per share, basic and diluted | | | 29,672,060 |

(1) In 2005, we completed the sale of an additional 27,235,783 shares of Series B Preferred Stock for net proceeds of approximately $33.5 million. After evaluating the fair value of the common stock obtainable upon conversion by the stockholders, we determined that the issuance of the Series B Preferred Stock sold in 2005 resulted in a beneficial conversion feature of approximately $33.5 million which was fully accreted in 2005 and is recorded as a deemed dividend to preferred stockholders for the year ended December 31, 2005.

| December 31, 2005 | Actual | Pro forma | Pro forma as adjusted ) |
|---|---|---|---|
| | | (unaudited | (unaudited |
| **Balance sheet data** | | | |
| Cash and cash equivalents and restricted cash | $ 21,443,045 | $ 21,443,045 | |
| Working capital | 28,308,434 | 28,308,434 | |
| Total assets | 35,752,770 | 35,752,770 | |
| Total liabilities | 5,087,963 | 5,087,963 | |
| Convertible preferred stock | 61,795,187 | — | |
| Deficit accumulated during the development stage | (36,329,408) | (36,329,408) | |
| Total stockholders' equity | 30,664,807 | 30,664,807 | |

# Risk factors

*Investing in our common stock involves a high degree of risk. You should consider carefully the risks and uncertainties described below, together with all of the other information in this prospectus, including the consolidated financial statements and the related notes appearing at the end of this prospectus, before deciding to invest in shares of our common stock. If any of the following risks actually occurs, our business, financial condition, results of operations and future prospects would likely be materially and adversely affected. In that event, the market price of our common stock could decline and you could lose all or part of your investment.*

## Risks related to our business and industry

***Our success is dependent on the success of our three product candidates in clinical development: iloperidone, VEC-162 and VSF-173. If any of these product candidates are determined to be unsafe or ineffective in humans, our business will be materially harmed.***

We are uncertain whether any of our current product candidates in clinical development will prove effective and safe in humans or meet applicable regulatory standards. To date, the data supporting our product candidates is derived solely from laboratory and pre-clinical studies and limited clinical trials. However, for each of our product candidates we must provide the FDA and similar foreign regulatory authorities with more extensive clinical data for a defined indication of the product candidate before these regulatory authorities can approve the product candidate for commercial sale. Frequently, product candidates that have shown promising results in early clinical trials have suffered significant setbacks in later clinical trials. Future clinical trials involving our product candidates may reveal that those candidates are ineffective, are unacceptably toxic, have other undesirable side effects or are otherwise unfit for future development. It is impossible to predict when or if any of our product candidates will prove effective or safe in humans or will receive regulatory approval. If we are unable to discover and develop products that are effective and safe in humans, our business will be materially harmed.

***Any failure or delay in completing clinical trials for our product candidates could severely harm our business.***

Pre-clinical studies and clinical trials required to demonstrate the safety and efficacy of our product candidates are time-consuming and expensive and together take several years to complete. To date we have not completed the clinical testing of any of our product candidates. The completion of clinical trials for our product candidates may be delayed by many factors, including:

- our inability to manufacture or obtain from third parties materials sufficient for use in pre-clinical studies and clinical trials
- delays in patient enrollment and variability in the number and types of patients available for clinical trials
- difficulty in maintaining contact with patients after treatment, resulting in incomplete data
- poor effectiveness of product candidates during clinical trials
- unforeseen safety issues or side effects
- governmental or regulatory delays and changes in regulatory requirements and guidelines

It is possible that none of our product candidates will complete clinical trials in any of the markets in which we intend to sell those product candidates. Accordingly, we may not receive the regulatory approvals needed to market our product candidates in any markets. Any failure or delay in commencing or completing clinical trials or obtaining regulatory approvals for our product candidates would severely harm our business.

***We face heavy government regulation, and FDA regulatory approval of our products is uncertain.***

The research, testing, manufacturing and marketing of drug products such as those that we are developing are subject to extensive regulation by federal, state and local government authorities, including the FDA. To obtain regulatory approval of a product, we must demonstrate to the satisfaction of the applicable regulatory agency that, among other things, the product is safe and effective for its intended use. In addition, we must show that the manufacturing facilities used to produce the products are in compliance with current Good Manufacturing Practices regulations, or cGMP.

The process of obtaining FDA and other required regulatory approvals and clearances will require us to expend substantial time and capital. Despite the time and expense expended, regulatory approval is never guaranteed. The number of pre-clinical and clinical tests that will be required for FDA approval varies depending on the drug candidate, the disease or condition that the drug candidate is in development for, and the regulations applicable to that particular drug candidate. The FDA can delay, limit or deny approval of a drug candidate for many reasons, including that:

- a drug candidate may not be safe or effective
- they may interpret data from pre-clinical and clinical testing in different ways than we do
- they may not approve our manufacturing process
- they may change their approval policies or adopt new regulations

For example, if certain of our methods for analyzing our trial data are not approved by the FDA, we may fail to obtain regulatory approval for our product candidates. We will be using a “mixed-method repeated measures” statistical model to analyze data from our Phase III trial for iloperidone, as we believe that this model will reduce certain biases that can be associated with other statistical models. We have discussed the use of this statistical model with the FDA in an August 2005 guidance meeting, and they have agreed that the model is valid. However, to our knowledge, the “mixed-method repeated measures” statistical model has not been previously used as the primary basis for judging efficacy in a clinical trial by the FDA. If the FDA does not approve of our findings based on our “mixed-method repeated measures” model, our clinical trial for iloperidone may not be successful.

Moreover, if and when our products do obtain such approval or clearances, the marketing, distribution and manufacture of such products would remain subject to extensive ongoing regulatory requirements. Failure to comply with applicable regulatory requirements could result in:

- warning letters
- fines
- civil penalties
- injunctions
- recall or seizure of products
- total or partial suspension of production

- refusal of the government to grant approvals
- withdrawal of approvals and criminal prosecution

Any delay or failure by us to obtain regulatory approvals for our product candidates could diminish competitive advantages that we may attain and would adversely affect the marketing of our products. We have not received regulatory approval to market any of our product candidates in any jurisdiction.

Even if we do receive regulatory approval for our drug candidates, the FDA may impose limitations on the indicated uses for which our products may be marketed, subsequently withdraw approval or take other actions against us or our products that are adverse to our business. The FDA generally approves products for particular indications. An approval for a more limited indication reduces the size of the potential market for the product. Product approvals, once granted, may be withdrawn if problems occur after initial marketing.

We also are subject to numerous federal, state and local laws, regulations and recommendations relating to safe working conditions, laboratory and manufacturing practices, the environment and the use and disposal of hazardous substances used in connection with our discovery, research and development work. In addition, we cannot predict the extent of government regulations or the impact of new governmental regulations that might significantly harm the discovery, development, production and marketing of our products. We may be required to incur significant costs to comply with current or future laws or regulations, and we may be adversely affected by the cost of such compliance.

***We intend to seek regulatory approvals for our products in foreign jurisdictions, but we may not obtain any such approvals.***

We intend to market our products outside the United States, either alone or with a commercial partner. In order to market our products in foreign jurisdictions, we may be required to obtain separate regulatory approvals and comply with numerous and varying regulatory requirements. The approval procedure varies among countries and jurisdictions and can involve additional testing, and the time required to obtain approval may differ from that required to obtain FDA approval. We have no experience with obtaining any such foreign approvals. Additionally, the foreign regulatory approval process may include all of the risks associated with obtaining FDA approval. For all of these reasons, we may not obtain foreign regulatory approvals on a timely basis, if at all. Approval by the FDA does not ensure approval by regulatory authorities in other countries or jurisdictions, and approval by one foreign regulatory authority does not ensure approval by regulatory authorities in other foreign countries or jurisdictions or by the FDA. We may not be able to file for regulatory approvals and may not receive necessary approvals to commercialize our products in any market. The failure to obtain these approvals could materially adversely affect our business, financial condition and results of operations.

***Our product candidates may cause undesirable side effects or have other properties that could delay or prevent their regulatory approval or limit their marketability.***

Undesirable side effects caused by our product candidates could interrupt, delay or halt clinical trials and could result in the denial of regulatory approval by the FDA or other regulatory authorities for any or all targeted indications, and in turn prevent us from commercializing our product candidates and generating revenues from their sale. For example, like many other drugs in its class, iloperidone is associated with a prolongation of the heart's QTc interval, which is a measurement of specific electrical activity in the heart as captured on an

electrocardiogram, corrected for heart rate. A QTc interval that is significantly prolonged may result in an abnormal heart rhythm with adverse consequences including fainting, dizziness, loss of consciousness and death. No patient in any of iloperidone's clinical trials was observed to have an interval that exceeded a 500-millisecond threshold of particular concern to the FDA. We will continue to assess the side effect profile of iloperidone and our other product candidates in our ongoing clinical development program.

In addition, if any of our product candidates receive marketing approval and we or others later identify undesirable side effects caused by the product, we could face one or more of the following:

- regulatory authorities may require the addition of labeling statements, such as a "black box" warning or a contraindication
- regulatory authorities may withdraw their approval of the product
- we may be required to change the way the product is administered, conduct additional clinical trials or change the labeling of the product
- our reputation may suffer

Any of these events could prevent us from achieving or maintaining market acceptance of the affected product or could substantially increase the costs and expenses of commercializing the product candidate, which in turn could delay or prevent us from generating significant revenues from its sale.

***Our product candidates may never achieve market acceptance even if we obtain regulatory approvals.***

Even if we receive regulatory approvals for the sale of our product candidates, the commercial success of these products will depend on, among other things, their acceptance by physicians, patients, third-party payors and other members of the medical community as a therapeutic and cost-effective alternative to competing products and treatments. The degree of market acceptance of any of our product candidates will depend on a number of factors, including the demonstration of its safety and efficacy, its cost-effectiveness, its potential advantages over other therapies, the reimbursement policies of government and third-party payors with respect to the product candidate, and the effectiveness of our marketing and distribution capabilities. If our product candidates fail to gain market acceptance, we may be unable to earn sufficient revenue to continue our business. If our product candidates do not become widely accepted by physicians, patients, third-party payors and other members of the medical community, it is unlikely that we will ever become profitable.

***If we fail to obtain the capital necessary to fund our research and development activities, we may be unable to continue operations or we may be forced to share our rights to commercialize our product candidates with third parties on terms that may not be attractive to us.***

Based on our current operating plans, and assuming the sale of shares of our common stock in this offering at an initial public offering price of $ per share (the mid-point of the price range set forth on the cover page of this prospectus), we believe that the proceeds from this offering, together with our existing cash, restricted cash and cash equivalents, will be sufficient to meet our anticipated operating needs until mid-2007, and after that time we will require additional capital. We believe that if we sell the shares of our common stock in

this offering at an initial public offering price of $ per share ($1.00 lower than the mid-point of the price range set forth on the cover page), the resultant reduction in proceeds we receive from the offering would cause us to require additional capital earlier, in . In addition, in budgeting for our activities following this offering, we have relied on a number of assumptions, including assumptions that we will enroll approximately 600 patients in our current Phase III iloperidone trial and that this trial will be conducted in accordance with our expectations, that we will enroll approximately 400 patients in our VEC-162 Phase III trial for insomnia and that this trial will be conducted in accordance with our expectations, that we will not engage in further business development activities, that we will not expend funds on the extended-release injectable formulation of, or bipolar indication for, iloperidone or on a Phase II trial of VEC-162 for depression, that we will be able to continue the manufacturing of our product candidates at commercially reasonable prices, that we will be able to retain our key personnel, and that we will not incur any significant contingent liabilities. We may need to raise additional funds more quickly if one or more of our assumptions prove to be incorrect or if we choose to expand our product development efforts more rapidly than we presently anticipate, and we may decide to raise additional funds even before we need them if the conditions for raising capital are favorable. We may seek to sell additional equity or debt securities or obtain a bank credit facility. The sale of additional equity or debt securities, if convertible, could result in dilution to our stockholders. The incurrence of indebtedness would result in increased fixed obligations and could also result in covenants that would restrict our operations.

We cannot assure you that additional funds will be available when we need them on terms that are acceptable to us, or at all. If we are unable to secure sufficient capital to fund our research and development activities we may not be able to continue operations or we may have to enter into strategic collaborations that could require us to share commercial rights to our products to a greater extent or at earlier stages in the drug development process than we currently intend. Collaborations that are consummated by us prior to proof-of-efficacy and safety of a product candidate could impair our ability to realize value from that product candidate.

***We have incurred operating losses in each year since our inception and expect to continue to incur substantial and increasing losses for the foreseeable future.***

We have a limited operating history. We have not generated any revenue from product sales to date and we cannot estimate the extent of our future losses. We do not currently have any products that have been approved for commercial sale and we may never generate revenue from selling products or achieve profitability. We expect to continue to incur substantial and increasing losses for the foreseeable future, particularly as we increase our research and development, clinical trial and administrative activity. As a result, we are uncertain when or if we will achieve profitability and, if so, whether we will be able to sustain it. We have been engaged in identifying and developing compounds and product candidates since March 2003. As of December 31, 2005, we have accumulated net losses of approximately $36.3 million. Our ability to achieve revenue and profitability is dependent on our ability to complete the development of our product candidates, conduct clinical trials, obtain necessary regulatory approvals, and have our products manufactured and marketed. We cannot assure you that we will be profitable even if we successfully commercialize our products. Failure to become and remain profitable may adversely affect the market price of our common stock and our ability to raise capital and continue operations.

***If our contract research organizations do not successfully carry out their duties or if we lose our relationships with contract research organizations, our drug development efforts could be delayed.***

We are dependent on contract research organizations, third-party vendors and investigators for pre-clinical testing and clinical trials related to our drug discovery and development efforts and we will likely continue to depend on them to assist in our future discovery and development efforts. These parties are not our employees and we cannot control the amount or timing of resources that they devote to our programs. If they fail to devote sufficient time and resources to our drug development programs or if their performance is substandard, it will delay the approval of our products. The parties with which we contract for execution of our clinical trials play a significant role in the conduct of the trials and the subsequent collection and analysis of data. Their failure to meet their obligations could adversely affect clinical development of our products. Moreover, these parties may also have relationships with other commercial entities, some of which may compete with us. If they assist our competitors it could harm our competitive position.

If we lose our relationship with any one or more of these parties, we could experience a significant delay in both identifying another comparable provider and then contracting for its services. We may be unable to retain an alternative provider on reasonable terms, if at all. Even if we locate an alternative provider, it is likely that this provider may need additional time to respond to our needs and may not provide the same type or level of service as the original provider. In addition, any provider that we retain will be subject to current Good Laboratory Practices, or cGLP, and similar foreign standards and we do not have control over compliance with these regulations by these providers. Consequently, if these practices and standards are not adhered to by these providers, the development and commercialization of our product candidates could be delayed.

***Materials necessary to manufacture our product candidates may not be available on commercially reasonable terms, or at all, which may delay the development, regulatory approval and commercialization of our product candidates.***

We rely on the manufacturers of our product candidates to purchase from third-party suppliers the materials necessary to produce the compounds for our clinical trials. Suppliers may not sell these materials to our manufacturers at the time we need them or on commercially reasonable terms. We do not have any control over the process or timing of the acquisition of these materials by our manufacturers. Moreover, we currently do not have any agreements for the commercial production of these materials. If our manufacturers are unable to obtain these materials for our clinical trials, product testing and potential regulatory approval of our product candidates would be delayed, significantly affecting our ability to develop our product candidates. If our manufacturers or we are unable to purchase these materials after regulatory approval has been obtained for our product candidates, the commercial launch of our product candidates would be delayed or there would be a shortage in supply, which would materially affect our ability to generate revenues from the sale of our product candidates.

***We rely on a limited number of manufacturers for our product candidates and our business will be seriously harmed if these manufacturers are not able to satisfy our demand and alternative sources are not available.***

We do not have an in-house manufacturing capability and depend completely on a small number of third-party manufacturers and active pharmaceutical ingredient formulators for the

manufacture of our products. We do not have long-term agreements with any of these third parties, and if they are unable or unwilling to perform for any reason, we may not be able to locate alternative acceptable manufacturers or formulators or enter into favorable agreements with them. Any inability to acquire sufficient quantities of our compounds in a timely manner from these third parties could delay clinical trials and prevent us from developing our product candidates in a cost-effective manner or on a timely basis. In addition, manufacturers of our compounds are subject to cGMP and similar foreign standards and we do not have control over compliance with these regulations by our manufacturers. If one of our contract manufacturers fails to maintain compliance, the production of our product candidates could be interrupted, resulting in delays and additional costs. In addition, if the facilities of such manufacturers do not pass a pre-approval plant inspection, the FDA will not grant pre-market approval of our products.

Our manufacturing strategy presents the following additional risks:

- the manufacturing processes for VEC-162 and VSF-173 have not been tested in quantities needed for continued clinical trials or commercial sales, and delays in scale-up to commercial quantities could delay clinical trials, regulatory submissions and commercialization of our compounds
- because most of our third-party manufacturers and formulators are located outside of the United States, there may be difficulties in importing our compounds or their components into the United States as a result of, among other things, FDA import inspections, incomplete or inaccurate import documentation or defective packaging
- because of the complex nature of our compounds, our manufacturers may not be able to successfully manufacture our compounds in a cost effective and/or timely manner

***We face substantial competition which may result in others developing or commercializing products before or more successfully than we do.***

Our future success will depend on our ability to demonstrate and maintain a competitive advantage with respect to our product candidates and our ability to identify and develop additional products through the application of our pharmacogenetics and pharmacogenomics expertise. Large, fully integrated pharmaceutical companies, either alone or together with collaborative partners, have substantially greater financial resources and have significantly greater experience than we do in:

- developing products
- undertaking pre-clinical testing and clinical trials
- obtaining FDA and other regulatory approvals of products
- manufacturing and marketing products

These companies may invest heavily and quickly to discover and develop novel products that could make our products obsolete. Accordingly, our competitors may succeed in obtaining patent protection, receiving FDA approval or commercializing superior products or other competing products before we do.

We believe the primary competitors for each of our product candidates are as follows:

- For iloperidone in the treatment of schizophrenia, the atypical antipsychotics Risperdal® (risperidone) by Johnson & Johnson (including the depot formulation Risperdal® Consta®), Zyprexa® (olanzapine) by Eli Lilly and Company, Seroquel® (quetiapine) by AstraZeneca PLC,

Abilify® (aripiprazole) by Bristol-Myers Squibb Company/Otsuka Pharmaceutical Co., Ltd., and Geodon® (ziprasidone) by Pfizer Inc., and generic clozapine, as well as the typical antipsychotics haloperidol, chlorpromazine, thioridazine and sulpiride (all of which are generic). In addition to the approved products, compounds in Phase III trials for the treatment of schizophrenia include bifeprunox (Wyeth/ Solvay S.A./ Lundbeck A/S), paliperidone (Johnson & Johnson), and asenapine (Pfizer).

- For VEC-162 in the treatment of insomnia, Rozerem™ (ramelteon) by Takeda Pharmaceuticals Company Limited, hypnotics such as Ambien® (zolpidem) by Sanofi-Aventis (including Ambien CR®), Lunesta® (eszopiclone) by Sepracor Inc. and Sonata® (zaleplon) by King Pharmaceuticals, Inc., generic benzodiazepines such as trazodone and doxepin, and over-the-counter remedies such as Benadryl® and Tylenol PM®. In addition to the approved products, compounds in Phase III trials for insomnia include indiplon (Pfizer/ Neurocrine Biosciences, Inc.) gaboxadol (Merck & Co., Inc./ Lundbeck), and low-dose doxepin (Silenor™, Somaxon Pharmaceuticals, Inc.).
- For VEC-162 in the treatment of depression, agomelatine (Les Laboratoires Servier), antidepressants such as Paxil® (paroxetine) by GSK, Zoloft® (sertraline) by Pfizer, Prozac® (fluoxetine) by Eli Lilly, and Lexapro (escitalopram) by Lundbeck/ Forest Pharmaceuticals Inc., Effexor® (venlafaxine) by Wyeth as well as other compounds such as Wellbutrin® (buproprion) by GlaxoSmithKline (GSK) and Cymbalta® (duloxetine) by Eli Lilly.
- For VSF-173 in the treatment of excessive sleepiness, Provigil® (modafinil) by Cephalon Inc. and Xyrem® (sodium oxybate) by Jazz Pharmaceuticals, Inc.

***We have no experience selling, marketing or distributing products and no internal capability to do so.***

At present, we have no sales or marketing personnel. In order to commercialize any of our product candidates, we must either acquire or internally develop sales, marketing and distribution capabilities, or enter into collaborations with partners to perform these services for us. We may not be able to establish sales and distribution partnerships on acceptable terms or at all, and if we do enter into a distribution arrangement, our success will be dependent upon the performance of our partner. In the event that we attempt to acquire or develop our own in-house sales, marketing and distribution capabilities, factors that may inhibit our efforts to commercialize our products without strategic partners or licensees include:

- our inability to recruit and retain adequate numbers of effective sales and marketing personnel
- the inability of sales personnel to obtain access to or persuade adequate numbers of physicians to prescribe our products
- the lack of complementary products to be offered by our sales personnel, which may put us at a competitive disadvantage against companies with broader product lines
- unforeseen costs associated with creating our own sales and marketing team or with entering into a partnering agreement with an independent sales and marketing organization

***We will need to increase the size of our organization, and we may experience difficulties in managing our growth.***

As of December 31, 2005, we had 31 full-time employees. We will need to continue to expand our managerial, operational, financial and other resources in order to manage and fund our operations, continue our development activities and commercialize our product candidates. Our current personnel, systems and facilities are not adequate to support this future growth. To manage our growth, we must:

- manage our clinical trials effectively
- manage our internal development efforts effectively
- improve our operational, financial, accounting and management controls, reporting systems and procedures
- attract and retain sufficient numbers of talented employees

We may be unable to successfully implement these tasks on a larger scale and, accordingly, may not achieve our development and commercialization goals.

***If we cannot identify, or enter into licensing arrangements for, new product candidates, our ability to develop a diverse product portfolio may be limited.***

A component of our business strategy is acquiring rights to develop and commercialize compounds discovered or developed by other pharmaceutical and biotechnology companies for which we may find effective uses and markets by using our unique pharmacogenetics and pharmacogenomics expertise. Competition for the acquisition of these compounds is intense. If we are not able to identify opportunities to acquire rights to commercialize additional products, we may not be able to develop a diverse portfolio of products and our business may be harmed. Additionally, it may take substantial human and financial resources to secure commercial rights to promising product candidates. Moreover, if other firms develop pharmacogenetics and pharmacogenomics capabilities, we may face increased competition in identifying and acquiring additional product candidates.

***If we lose key scientists or management personnel, or if we fail to recruit additional highly skilled personnel, it will impair our ability to identify, develop and commercialize product candidates.***

We are highly dependent on principal members of our management team and scientific staff, including our Chief Executive Officer, Mihael H. Polymeropoulos, M.D. These executives each have significant pharmaceutical industry experience. The loss of any such executives, including Dr. Polymeropoulos, or any other principal member of our management team or scientific staff, would impair our ability to identify, develop and market new products.

***Product liability lawsuits could divert our resources, result in substantial liabilities and reduce the commercial potential of our products.***

The risk that we may be sued on product liability claims is inherent in the development of pharmaceutical products. For example, we face a risk of product liability exposure related to the testing of our product candidates in clinical trials and will face even greater risks upon any commercialization by us of our product candidates. We believe that we may be at a greater risk of product liability claims relative to other pharmaceutical companies because our

compounds are intended to treat behavioral disorders, and it is possible that we may be held liable for the behavior and actions of patients who use our compounds. These lawsuits may divert our management from pursuing our business strategy and may be costly to defend. In addition, if we are held liable in any of these lawsuits, we may incur substantial liabilities and may be forced to limit or forego further commercialization of one or more of our products. Although we maintain general liability and product liability insurance, our aggregate coverage limit under this insurance is $5,000,000, and while we believe this amount of insurance is sufficient to cover our product liability exposure, these limits may not be high enough to fully cover potential liabilities. In addition, product liability insurance is becoming increasingly expensive, and we may not be able to obtain or maintain sufficient insurance coverage at an acceptable cost or otherwise to protect against potential product liability claims, which could prevent or inhibit the commercial production and sale of our products.

***Legislative or regulatory reform of the healthcare system in the U.S. and foreign jurisdictions may affect our ability to sell our products profitably.***

The continuing efforts of the U.S. and foreign governments, insurance companies, managed care organizations and other payors of health care services to contain or reduce health care costs may adversely affect our ability to set prices for our products which we believe are fair, and our ability to generate revenues and achieve and maintain profitability.

Specifically, in both the United States and some foreign jurisdictions there have been a number of legislative and regulatory proposals to change the healthcare system in ways that could affect our ability to sell our products profitably. In the United States, the Medicare Prescription Drug Improvement and Modernization Act of 2003 reforms the way Medicare will cover and reimburse for pharmaceutical products. This legislation could decrease the coverage and price that we may receive for our products. Other third-party payors are increasingly challenging the prices charged for medical products and services. It will be time-consuming and expensive for us to go through the process of seeking reimbursement from Medicare and private payors. Our products may not be considered cost effective, and coverage and reimbursement may not be available or sufficient to allow us to sell our products on a competitive and profitable basis. Further federal and state proposals and healthcare reforms are likely which could limit the prices that can be charged for the drugs we develop and may further limit our commercial opportunity. Our results of operations could be materially adversely affected by the Medicare prescription drug coverage legislation, by the possible effect of this legislation on amounts that private insurers will pay and by other healthcare reforms that may be enacted or adopted in the future.

In some foreign countries, including major markets in the European Union and Japan, the pricing of prescription pharmaceuticals is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take six to twelve months or longer after the receipt of regulatory marketing approval for a product. To obtain reimbursement or pricing approval in some countries, we may be required to conduct a clinical trial that compares the cost-effectiveness of our product candidate to other available therapies. If reimbursement of our products is unavailable or limited in scope or amount or if pricing is set at unsatisfactory levels, our business could be materially harmed.

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

We expect our operating results to be subject to quarterly fluctuations. The revenues we generate, if any, and our operating results will be affected by numerous factors, including:

- our addition or termination of development programs
- variations in the level of expenses related to our existing three product candidates or future development programs
- our execution of collaborative, licensing or other arrangements, and the timing of payments we may make or receive under these arrangements
- any intellectual property infringement lawsuit in which we may become involved
- regulatory developments affecting our product candidates or those of our competitors

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

## Risks related to intellectual property and other legal matters

***Our rights to develop and commercialize our product candidates are subject in part to the terms and conditions of licenses or sublicenses granted to us by other pharmaceutical companies. With respect to VEC-162 and VSF-173, these terms and conditions include options in favor of these pharmaceutical companies to reacquire rights to commercialize and develop these product candidates in certain circumstances.***

Iloperidone is based in part on patents and other intellectual property owned by Sanofi-Aventis and Novartis. Titan Pharmaceuticals, Inc. holds an exclusive license from Sanofi-Aventis to the intellectual property owned by Sanofi-Aventis, and Titan has sublicensed its rights under such license on an exclusive basis to Novartis. We have acquired exclusive rights to this intellectual property through a further sublicense from Novartis. Our rights with respect to this intellectual property to develop and commercialize iloperidone may terminate, in whole or in part, if we fail to meet certain milestones contained in our sublicense agreement with Novartis relating to the time it takes for us to launch iloperidone commercially following regulatory approval, and the time it takes for us to receive regulatory approval following our submission of an NDA or equivalent foreign filing. We may also lose our rights to develop and commercialize iloperidone if we fail to pay royalties to Novartis, if we fail to comply with certain requirements in the sublicense regarding our financial condition, or if we fail to comply with certain restrictions regarding our other development activities. Finally, our rights to develop and commercialize iloperidone may be impaired if we do not cure breaches by Novartis and Titan of similar obligations contained in these sublicense and license agreements, although we are not aware of any such breach by Titan or Novartis. In the event of an early termination of our sublicense agreement, all rights licensed and developed by us under this agreement may be extinguished, which would have a material adverse effect on our business.

VEC-162 is based in part on patents that we have licensed on an exclusive basis and other intellectual property licensed from Bristol-Myers Squibb Company (BMS). BMS has a right of first negotiation to enter into a commercialization and development agreement with us prior to the completion of our Phase III program. Additionally, following the completion of our Phase III program for VEC-162, and in the event that we have not entered into one or more

development and commercialization agreement with one or more third parties covering certain significant markets, BMS has retained an option to reacquire the rights it has licensed to us to exclusively develop and commercialize VEC-162 on pre-determined financial terms, including the payment of royalties and milestone payments to us. If we seek a co-promotion agreement for VEC-162, BMS has a right of first negotiation to enter into such an agreement with us. BMS may terminate our license if we fail to meet certain milestones or if we otherwise breach our royalty or other obligations in the agreement. In the event that we terminate our license, or if BMS terminates our license due to our breach, all of our rights to VEC-162 (including any intellectual property we develop with respect to VEC-162) will revert back to BMS or otherwise be licensed back to BMS on an exclusive basis. Any termination or reversion of our rights to develop or commercialize VEC-162, including any reacquisition by BMS of our rights, may have a material adverse effect on our business.

VSF-173 is based in part on patents and other intellectual property that we have licensed on an exclusive basis from Novartis. Novartis has the option to reacquire rights to co-develop and exclusively commercialize VSF-173 following the completion of the Phase II trials, and an additional option to reacquire co-development rights and exclusive commercialization rights following the completion of the Phase III clinical trials, subject in each case to Novartis' payment of pre-determined royalties and other payments to us. In the event that Novartis chooses not to exercise either of these options and we decide to enter into a partnering arrangement to help us commercialize VSF-173, Novartis has a right of first refusal to negotiate such an agreement with us, as well as a right to submit a last matching counteroffer regarding such an agreement. In addition, our rights with respect to VSF-173 may terminate, in whole or in part, if we fail to meet certain development and commercialization milestones described in our license agreement relating to the time it takes us to complete our development work on VSF-173. These rights may also terminate in whole or in part if we fail to meet certain development and commercialization milestones described in our license agreement, if we fail to make royalty or milestone payments or if we do not comply with requirements in our license agreement regarding our financial condition. In the event of an early termination of our license agreement, all rights licensed and developed by us under this agreement may revert back to Novartis. Any termination or reversion of our rights to develop or commercialize VSF-173, including any reacquisition by Novartis of our rights, may have a material adverse effect on our business.

***If our efforts to protect the proprietary nature of the intellectual property related to our products are not adequate, we may not be able to compete effectively in our markets.***

In addition to the rights we have licensed from Novartis and BMS relating to our product candidates, we rely upon intellectual property we own relating to our products, including patents, patent applications and trade secrets. As of December 31, 2005, we owned 12 pending patent applications in the United States and 2 pending Patent Cooperation Treaty applications, which permits the pursuit of patents outside of the United States, relating to our product candidates in clinical development. Our patent applications may be challenged or fail to result in issued patents and our existing or future patents may be too narrow to prevent third parties from developing or designing around these patents. In addition, we rely on trade secret protection and confidentiality agreements to protect certain proprietary know-how that is not patentable, for processes for which patents are difficult to enforce and for any other elements of our drug development processes that involve proprietary know-how, information and technology that is not covered by patent applications. While we require all of our employees,

consultants, advisors and any third parties who have access to our proprietary know-how, information and technology to enter into confidentiality agreements, we cannot be certain that this know-how, information and technology will not be disclosed or that competitors will not otherwise gain access to our trade secrets or independently develop substantially equivalent information and techniques. Further, the laws of some foreign countries do not protect proprietary rights to the same extent as the laws of the United States. As a result, we may encounter significant problems in protecting and defending our intellectual property both in the United States and abroad. If we are unable to protect or defend the intellectual property related to our technologies to third parties, we will not be able to establish or maintain a competitive advantage in our market.

***If we do not obtain protection under the Hatch-Waxman Act and similar foreign legislation to extend our patents and to obtain market exclusivity for our product candidates, our business will be materially harmed.***

The United States Drug Price Competition and Patent Term Restoration Act of 1984, more commonly known as the "Hatch-Waxman Act," provides for an extension of patent protection for drug compounds for a period of up to five years to compensate for time spent in development. Assuming we gain a five-year extension for each of our current product candidates in clinical development, and that we continue to have rights under our sublicense and license agreements with respect to these product candidates, we would have exclusive rights to iloperidone's United States "new chemical entity" patent (the primary patent covering the compound as a new composition of matter) until 2016, to VEC-162's United States new chemical entity patent until 2022 and to VSF-173's United States new chemical entity patent until 2019. In Europe, similar legislative enactments allow patent protection in the European Union to be extended for up to five years through the grant of a Supplementary Protection Certificate. Assuming we gain such a five-year extension for each of our current product candidates in clinical development, and that we continue to have rights under our sublicense and license agreements with respect to these product candidates, we would have exclusive rights to iloperidone's European new chemical entity patents until 2015, to VEC-162's European new chemical entity patents until 2022 and to VSF-173's European new chemical entity patents until 2017. Additionally, a recent directive in the European Union provides that companies who receive regulatory approval for a new compound will have a 10-year period of market exclusivity for that compound (with the possibility of a further one-year extension) in most EU countries, beginning on the date of such European regulatory approval, regardless of when the European new chemical entity patent covering such compound expires. A generic version of the approved drug may not be marketed or sold during such market exclusivity period. This directive may be of particular importance with respect to iloperidone, since the European new chemical entity patent for iloperidone will likely expire prior to the end of this 10-year period of market exclusivity. However, there is no assurance that we will receive the extensions of our patents or other exclusive rights available under the Hatch-Waxman Act or similar foreign legislation. If we fail to receive such extensions and exclusive rights, our ability to prevent competitors from manufacturing, marketing and selling generic versions of our products will be materially harmed.

***Litigation or third-party claims of intellectual property infringement could require us to divert resources and may prevent or delay our drug discovery and development efforts.***

Our commercial success depends in part on our not infringing the patents and proprietary rights of third parties. Third parties may assert that we are employing their proprietary

technology without authorization. In addition, third parties may obtain patents in the future and claim that use of our technologies infringes upon these patents. Furthermore, parties making claims against us may obtain injunctive or other equitable relief, which could effectively block our ability to develop and commercialize one or more of our product candidates. Defense of these claims, regardless of their merit, would divert substantial financial and employee resources from our business. In the event of a successful claim of infringement against us, we may have to pay substantial damages, obtain one or more licenses from third parties or pay royalties. In addition, even in the absence of litigation, we may need to obtain additional licenses from third parties to advance our research or allow commercialization of our product candidates. We may fail to obtain any of these licenses at a reasonable cost or on reasonable terms, if at all. In that event, we would be unable to develop and commercialize further one or more of our product candidates.

In addition, in the future we could be required to initiate litigation to enforce our proprietary rights against infringement by third parties. Prosecution of these claims to enforce our rights against others could divert substantial financial and employee resources from our business. If we fail to enforce our proprietary rights against others, our business will be harmed.

***If we use hazardous and biological materials in a manner that causes injury or violates applicable law, we may be liable for damages.***

Our research and development activities involve the controlled use of potentially hazardous substances, including toxic chemical and biological materials. We could be held liable for any contamination, injury or other damages resulting from these hazardous substances. In addition, our operations produce hazardous waste products. While third parties are responsible for disposal of our hazardous waste, we could be liable under environmental laws for any required cleanup of sites at which our waste is disposed. Federal, state, foreign and local laws and regulations govern the use, manufacture, storage, handling and disposal of these hazardous materials. If we fail to comply with these laws and regulations at any time, or if they change, we may be subject to criminal sanctions and substantial civil liabilities, which may adversely affect our business.

Even if we continue to comply with all applicable laws and regulations regarding hazardous materials, we cannot eliminate the risk of accidental contamination or discharge and our resultant liability for any injuries or other damages caused by these accidents. Although we maintain pollution liability insurance, our coverage limit under this insurance is $2,000,000, and while we believe this amount and type of insurance is sufficient to cover risks typically associated with our handling of materials, the insurance may not cover all environmental liabilities, and these limits may not be high enough to cover potential liabilities for these damages fully. The amount of uninsured liabilities may exceed our financial resources and materially harm our business.

## Risks related to this offering

***Our stock price may be extremely volatile and you may not be able to resell your shares at or above the initial public offering price.***

Prior to this offering, there has been no public market for our common stock. Negotiations between the underwriters and us will determine the initial public offering price. This price may not be indicative of future market prices. In addition, the stock market has from time to time

experienced significant price and volume fluctuations, and the market prices of the securities of life sciences companies without product revenues, such as ours, have been highly volatile.

The following factors, in addition to the other risk factors described in this section, may also have a significant impact on the market price of our common stock:

- publicity regarding actual or potential testing or trial results or the outcome of regulatory review relating to products under development by us or our competitors
- regulatory developments in the United States and foreign countries
- developments concerning any collaboration we may undertake
- announcements of patent issuances or denials, technological innovations or new commercial products by us or our competitors
- economic and other external factors beyond our control

As a result of these factors, after this offering you might be unable to resell your shares at or above the initial public offering price.

***An active trading market for our common stock may not develop.***

Prior to this offering, there has been no public market for our common stock. Although we anticipate that our common stock will be approved for listing on The Nasdaq National Market, an active trading market for our shares may never develop or be sustained following this offering. The initial public offering price for our common stock will be determined through negotiations with the underwriters. This initial public offering price may vary from the market price of our common stock after the offering. Investors may not be able to sell their common stock at or above the initial public offering price.

***A substantial number of shares of our common stock could be sold into the public market shortly after this offering, which could depress our stock price.***

The market price of our common stock could decline as a result of sales by our existing stockholders of shares of common stock in the market after this offering or the perception that these sales could occur. Once a trading market develops for our common stock, many of our stockholders will have an opportunity to sell their stock for the first time. These factors could also make it difficult for us to raise additional capital by selling stock. Specifically, after this offering we will have shares of common stock outstanding based on the number of shares outstanding as of December 31, 2005. This includes the shares that we are selling in this offering, which may be resold in the public market immediately. The remaining 52,603,972 shares are currently restricted as a result of securities laws or contractual restrictions but will be able to be sold after this offering as described in the “Shares eligible for future sale” section of the prospectus. Please see the section entitled “Shares eligible for future sale” for more information regarding these factors.

***You will incur immediate and substantial dilution in the pro forma as adjusted net tangible book value of the stock you purchase.***

We estimate that the initial public offering price of our common stock will be $ per share. This amount is substantially higher than the pro forma as adjusted net tangible book value that our outstanding common stock will have immediately after this offering. Accordingly, if you purchase shares of our common stock at the assumed initial public offering price, you will

incur immediate and substantial dilution of $ per share. If the holders of outstanding options or warrants exercise those options or warrants, you will suffer further dilution.

***Our management will have broad discretion over the use of the proceeds we receive in this offering and might not apply the proceeds in ways that increase the value of your investment.***

Our management will have broad discretion to use the net proceeds from this offering, and you will be relying on the judgment of our management regarding the application of these proceeds. They might not apply the net proceeds of this offering in ways that increase the value of your investment. We expect to use the net proceeds from this offering for general corporate purposes, including working capital and capital expenditures, further clinical development of our current product candidates and possible investments in, or acquisitions of, new product candidates. We have not allocated these net proceeds for any specific purposes. Our management might not be able to yield any return on the investment and use of these net proceeds. You will not have the opportunity to influence our decisions on how to use the proceeds.

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

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

***We will incur increased costs as a result of being a public company.***

As a public company, we will incur significant legal, accounting, reporting and other expenses that we did not incur as a private company. We expect these rules and regulations to increase our legal and financial compliance costs and to make some activities more time-consuming and costly. We also expect these new rules and regulations may make it more difficult and more expensive for us to obtain director and officer liability insurance and we may be required to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage. As a result, we may experience more difficulty attracting and retaining qualified individuals to serve on our board of directors or as executive officers. We cannot predict or estimate the amount of additional costs we may incur as a result of these requirements or the timing of such costs.

***Existing stockholders may significantly influence us, which could delay or prevent an acquisition by a third party or result in the entrenchment of management or the Board of Directors.***

Upon completion of this offering, executive officers, key employees and directors and their affiliates will beneficially own, in the aggregate, approximately % of our outstanding common stock. As a result, these stockholders, if acting together, may be able to exercise significant influence over all matters requiring stockholder approval, including the election of

directors and approval of significant corporate transactions, which could have the effect of delaying or preventing either a third party from acquiring control over us or any changes to our management or Board of Directors. For information regarding the ownership of our outstanding stock by our executive officers and directors and their affiliates, please see “Principal stockholders.”

***Anti-takeover provisions in our charter and bylaws, and in Delaware law, could prevent or delay a change in control of our company.***

We are a Delaware corporation and the anti-takeover provisions of the Delaware General Corporation Law may discourage, delay or prevent a change in control by prohibiting us from engaging in a business combination with an interested stockholder for a period of three years after the person becomes an interested stockholder, even if a change of control would be beneficial to our existing stockholders. For more information, see “Description of capital stock—Anti-takeover effects of provisions of our amended and restated certificate of incorporation, bylaws and Delaware law.” In addition, our amended and restated certificate of incorporation and by laws may discourage, delay or prevent a change in our management or control over us that stockholders may consider favorable. Our amended and restated certificate of incorporation and bylaws, which will be in effect as of the closing of this offering:

- authorize the issuance of “blank check” preferred stock that could be issued by our board of directors to thwart a takeover attempt
- do not provide for cumulative voting in the election of directors, which would allow holders of less than a majority of the stock to elect some directors
- establish a classified board of directors, as a result of which the successors to the directors whose terms have expired will be elected to serve from the time of election and qualification until the third annual meeting following their election
- require that directors only be removed from office for cause
- provide that vacancies on the board of directors, including newly-created directorships, may be filled only by a majority vote of directors then in office
- limit who may call special meetings of stockholders
- prohibit stockholder action by written consent, requiring all actions to be taken at a meeting of the stockholders
- establish advance notice requirements for nominating candidates for election to the board of directors or for proposing matters that can be acted upon by stockholders at stockholder meetings

For information regarding these and other provisions, please see “Description of capital stock.”

# Forward-looking statements

This prospectus includes “forward-looking statements,” as defined by federal securities laws, with respect to our financial condition, results of operations and business, and our expectations or beliefs concerning future events, including increases in operating margins. Words such as, but not limited to, “believe,” “expect,” “anticipate,” “estimate,” “intend,” “plan,” “targets,” “likely,” “will,” “would,” “could,” and similar expressions or phrases identify forward-looking statements.

All forward-looking statements involve risks and uncertainties. The occurrence of the events described, and the achievement of the expected results, depend on many events, some or all of which are not predictable or within our control. Actual results may differ materially from expected results. Factors that may cause actual results to differ from expected results include, among others:

- a failure of our product candidates to be demonstrably safe and effective
- a failure to obtain regulatory approval for our products or to comply with ongoing regulatory requirements
- a lack of acceptance of our product candidates in the marketplace, or a failure to become or remain profitable
- our inability to obtain the capital necessary to fund our research and development activities
- our failure to identify or obtain rights to new product candidates
- a failure to develop or obtain sales, marketing and distribution resources and expertise or to otherwise manage our growth
- a loss of any of our key scientists or management personnel
- losses incurred from product liability claims made against us
- a loss of rights to develop and commercialize our products under our license and sublicense agreements
- the increased expenses and administrative workload associated with being a public company

All future written and verbal forward-looking statements attributable to us or any person acting on our behalf are expressly qualified in their entirety by the cautionary statements contained or referred to in this section. We undertake no obligation, and specifically decline any obligation, to update or revise publicly any forward-looking statements, whether as a result of new information, future events or otherwise. In light of these risks, uncertainties and assumptions, the forward-looking events discussed in this prospectus might not occur.

See the section entitled “Risk factors” for a more complete discussion of these and other risks and uncertainties. The risk factors described in this prospectus are not necessarily all of the important factors that could cause actual results to differ materially from those expressed in any of our forward-looking statements. Other unknown or unpredictable factors also could affect our results. Consequently, there can be no assurance that the actual results or developments anticipated by us will be realized or, even if substantially realized, that they will have the expected consequences to, or effects on, us. Given these uncertainties, prospective investors are cautioned not to place undue reliance on such forward-looking statements.

# Use of proceeds

We estimate that we will receive approximately $ million in net proceeds from the sale of our common stock in this offering, based on an assumed initial public offering price of $ per share (the midpoint of the initial public offering price range) and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. A $1.00 increase (decrease) in the assumed initial public offering price of $ per share would increase (decrease) the net proceeds to us from this offering by $ million, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. Our net proceeds will increase by approximately $ million if the underwriters' over-allotment option is exercised in full.

We currently intend to use the net proceeds of this offering for the continued clinical trials of our product candidates, other research and development activities, and for working capital purposes. More specifically, we currently intend to use the net proceeds of this offering as follows:

- Approximately $25.0 million to fund our ongoing Phase III trial for iloperidone in schizophrenia, which we currently anticipate will be completed in the first half of 2007
- Approximately $10.0 million to fund our current Phase III trial for VEC-162 in insomnia
- Approximately $5.0 million to fund a Phase II trial for VSF-173 in excessive sleepiness
- Approximately $20.0 million to fund our other ongoing research and development activities

The balance of such net proceeds will be used for general corporate purposes as determined by our management, including for working capital and the acquisition or licensing of businesses or product candidates that are complementary to our own. Currently, we have no specific plans or commitments with respect to any acquisition or license. We cannot assure you that we will complete any acquisitions or licenses or that, if completed, any acquisition or license will be successful.

The amount and timing of our actual expenditures will depend on numerous factors, including the progress of our research and development activities and clinical trials, the number and breadth of our product development programs, our ability to establish and maintain corporate collaborations and other arrangements and the amount of cash, if any, generated by our operations.

We will retain broad discretion in the allocation and use of the remaining net proceeds of this offering. Pending application of the net proceeds, as described above, we intend to invest any remaining proceeds in short-term, investment-grade, interest-bearing securities.

# Dividend policy

We have never declared or paid any dividends on our capital stock. We currently intend to retain any future earnings to finance our research and development efforts, the further development of our pharmacogenetics and pharmacogenomics expertise and the expansion of our business and do not intend to declare or pay 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 and will depend upon results of operations, financial condition, contractual restrictions, restrictions imposed by applicable law and other factors our board of directors deems relevant.

# Capitalization

The following table sets forth the following information:

- our actual capitalization as of December 31, 2005
- our pro forma capitalization after giving effect to the conversion of all outstanding shares of preferred stock into common stock upon the completion of this offering
- our pro forma as adjusted capitalization to reflect our receipt of the estimated net proceeds from our sale of shares of common stock in this offering, after deducting the underwriting discounts and commissions and estimated offering expenses, the filing of a new certificate of incorporation after the closing of this offering and the application of our proceeds from this offering

This table excludes the following shares:

- 5,578,824 shares of common stock available as of December 31, 2005 for issuance under our Second Amended and Restated Management Equity Plan and agreements entered into pursuant to such Plan
- 166,600 shares of common stock available for issuance upon the exercise of outstanding warrants

See “Management— Employee benefit plans,” and Note 10 of “Notes to consolidated financial statements” for a description of our equity plans.

| | Actual | Pro forma | Pro forma as adjusted |
|---|---|---|---|
| Convertible Preferred stock, $0.001 par value; 52,276,437 shares authorized, 52,276,437 shares issued and outstanding; 52,276,437 shares authorized, no shares outstanding on a pro forma basis; shares authorized, no shares outstanding on a pro forma as adjusted basis, respectively | $ 61,795,187 | $ — | |
| Stockholders’ equity: | | | |
| Common stock, $0.001 par value; 70,000,000 shares authorized, 327,535 shares issued and outstanding; 70,000,000 shares authorized, 52,603,972 shares issued and outstanding on a pro forma basis, and shares issued and outstanding on a pro forma as adjusted basis, respectively | $ 328 | $ 52,604 | |
| Additional paid-in capital(1) | $ 23,982,752 | $ 85,725,663 | |
| Deferred compensation | (18,776,443) | (18,766,443) | |
| Accumulated deficit | (36,329,408) | (36,329,408) | |
| Total stockholders’ equity(1) | 30,664,807 | 30,664,807 | |
| Total capitalization(1) | 30,664,807 | 30,664,807 | |

(1) A $1.00 increase (decrease) in the assumed initial public offering price of $ per share would increase (decrease) each of additional paid-in capital, total stockholders’ equity and total capitalization by $ million, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

# Dilution

If you invest in our common stock in this offering, your interest will be diluted to the extent of the difference between the public offering price per share of our common stock and the pro forma net tangible book value per share of our common stock after this offering.

As of December 31, 2005, our net tangible book value was approximately $30.7 million, or $93.62 per share of common stock. Our net tangible book value per share represents the amount of our total tangible assets reduced by the amount of our total liabilities, divided by the number of shares of our common stock outstanding as of December 31, 2005, before giving effect to any conversion of our preferred stock into common stock. Our pro forma net tangible book value as of December 31, 2005 was approximately $30.7 million, or $0.58 per share of common stock. Our pro forma net tangible book value per share represents the amount to our total tangible assets reduced by the amount of our total liabilities, divided by the total number of shares of our common stock outstanding as of December 31, 2005, after giving effect to the conversion of our preferred stock into common stock upon completion of this offering. After giving effect to our sale in this offering of shares of our common stock at an assumed initial public offering price of $ per share (the midpoint of the price range set forth on the cover page of this prospectus) and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us, our pro forma net tangible book value as of December 31, 2005 would have been $ million, or $ per share of our common stock. This represents an immediate increase of net tangible book value of $ per share to our existing stockholders and an immediate dilution of $ per share to investors purchasing shares in this offering.

The following table illustrates this per share dilution:

| | | |
|---|---|---|
| Assumed initial public offering price per share | | $ |
| Net tangible book value per share applicable to common stockholders as of December 31, 2005 | $ 93.62 | |
| Pro forma net tangible book value per share applicable to common stockholders as of December 31, 2005 | 0.58 | |
| Increase in pro forma net tangible book value per share attributable to investors purchasing shares in this offering | | |
| Pro forma net tangible book value per share after giving effect to this offering | | |
| Dilution in pro forma net tangible book value per share to investors purchasing shares in this offering | | $ |

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

If the underwriters exercise their option to purchase additional shares of our common stock in full in this offering, the pro forma net tangible book value per share after the offering would be $ per share, the increase in pro forma net tangible book value per share to existing

stockholders would be $ per share and the dilution to new investors purchasing shares in this offering would be $ per share.

The following table presents on a pro forma basis as of December 31, 2005, after giving effect to the conversion of all outstanding shares of preferred stock into common stock upon completion of this offering, the differences between the existing stockholders and the purchasers of shares in the offering with respect to the number of shares purchased from us, the total consideration paid and the average price paid per share:

| | Shares purchased | | Total consideration | | Average price per share |
|---|---|---|---|---|---|
| | Number | Percent | Amount | Percent | |
| Existing stockholders | 52,603,972 | % | $ 62,035,772 | % | $ 1.18 |
| New investors(1) | | % | | % | |
| Total | — | 100.0% | $ — | 100.0% | $ |

(1) A $1.00 increase (decrease) in the assumed initial public offering price of $ per share would increase (decrease) the amount of total consideration to $ .

The discussion and the tables above assume no exercise of stock options or warrants outstanding on December 31, 2005 and no issuance of shares reserved for future issuance under our equity compensation plans. In addition, the numbers set forth in the table above reflect the conversion of all shares of our outstanding preferred stock into shares of common stock upon completion of this offering. As of December 31, 2005, there were:

- 5,072,457 shares of common stock issuable upon exercise of outstanding options, with a weighted-average exercise price of $0.42 per share
- 166,600 shares of common stock issuable upon exercise of outstanding warrants with an exercise price of $0.40 per share
- an additional 506,367 shares reserved for future stock option grants and purchases under our existing equity compensation plans

If the underwriters' over-allotment option is exercised in full, the following will occur:

- the percentage of shares of common stock held by existing stockholders will decrease to approximately % of the total number of shares of our common stock outstanding after this offering
- the number of shares held by new investors will be increased to or approximately % of the total number of shares of our common stock outstanding after this offering

# Selected consolidated financial data

The consolidated statements of operations data for the period of March 13, 2003 (inception) to December 31, 2003 and the years ended December 31, 2004 and December 31, 2005 and the consolidated balance sheet data at December 31, 2004 and December 31, 2005 are derived from our audited consolidated financial statements included in this prospectus. The historical results are not necessarily indicative of the results to be expected in future periods.

The following data should be read together with our consolidated financial statements and accompanying notes and the section entitled “Management’s discussion and analysis of financial condition and results of operations” included in this prospectus.

| | Period from March 13, 2003 (inception) to December 31, 2003 | Year ended December 31, 2004 | Year ended December 31, 2005 |
|---|---|---|---|
| **Statements of operations data** | | | |
| Revenue | $ 47,565 | $ 33,980 | $ — |
| Operating expenses: | | | |
| Research and development | 2,010,532 | 7,442,983 | 16,980,615 |
| General and administrative | 1,052,659 | 2,119,394 | 7,396,038 |
| Total operating expenses | 3,063,191 | 9,562,377 | 24,286,653 |
| Loss from operations | (3,015,626) | (9,528,397) | (24,286,653) |
| Interest and other income, net | 44,805 | 59,060 | 410,001 |
| Net loss before tax expense | (2,970,821) | (9,469,337) | (23,876,652) |
| Tax expense | — | 4,949 | 7,649 |
| Net loss | (2,970,821) | (9,474,286) | (23,884,301) |
| Beneficial conversion feature—deemed dividend to preferred stockholders(1) | — | — | (33,486,623) |
| Net loss attributable to common stockholders | $ (2,970,821) | $ (9,474,286) | $ (57,370,924) |
| Net loss per share applicable to common stockholders, basic and diluted | $ (297.08) | $ (947.43) | $ (1,019.29) |
| Shares used in computing net loss per share, basic and diluted | 10,000 | 10,000 | 56,285 |

(1) In 2005, we completed the sale of an additional 27,235,783 shares of Series B Preferred Stock for proceeds of approximately $33.5 million. After evaluating the fair value of our common stock obtainable upon conversion by the stockholders, we determined that the issuance of the Series B Preferred Stock sold in 2005 resulted in a beneficial conversion feature of approximately $33.5 million which was fully accreted in 2005 and is recorded as a deemed dividend to preferred stockholders for the year ended December 31, 2005.

| | As of December 31, | |
|---|---|---|
| | 2004 | 2005 |
| **Balance sheet data** | | |
| Cash and cash equivalents and restricted cash | $ 16,259,770 | $ 21,443,045 |
| Working capital | 14,827,621 | 28,308,434 |
| Total assets | 17,752,241 | 35,752,770 |
| Total liabilities | 1,808,654 | 5,087,963 |
| Convertible preferred stock | 28,308,564 | 61,795,187 |
| Deficit accumulated during the development stage | (12,445,107) | (36,329,408) |
| Total stockholders' equity | 15,943,587 | 30,664,807 |

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

*You should read the following discussion and analysis of our financial condition and results of operations together with "Selected Financial Data" and our consolidated financial statements and related notes appearing at the end of this prospectus. Some of the information contained in this discussion and analysis or set forth elsewhere in this prospectus include historical information and other information with respect to our plans and strategy for our business and contain forward-looking statements that involve risk, uncertainties and assumptions. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of certain factors, including but not limited to those set forth under the "Risk factors" section of this prospectus and elsewhere in this prospectus.*

## Overview

Since we began our operations in March 2003, we have devoted substantially all of our resources to the in-licensing and clinical development of small molecule therapeutics for various central nervous system disorders. Our lead product candidate, iloperidone, is a compound for the treatment of schizophrenia and bipolar disorder and is in a Phase III trial for schizophrenia. Our second product candidate, VEC-162, is a compound for the treatment of insomnia and depression which is currently in a Phase III trial for insomnia. VEC-162 is also ready for Phase II trials for the treatment of depression. Our third product candidate, VSF-173, is a compound for the treatment of excessive sleepiness and is ready for a Phase II trial.

We expect to complete our Phase III trial for iloperidone in the first half of 2007. If this trial is successful, we will file an NDA for approval with the FDA later that year. We recently generated positive efficacy and safety data in a Phase II trial of VEC-162 for insomnia and commenced our Phase III trial for VEC-162 in insomnia in February 2006. We also expect to begin a Phase II trial of VSF-173 for excessive sleepiness in the second half of 2006. Assuming successful outcomes of our clinical trials and approval by the FDA, we expect to commercialize iloperidone and VSF-173 with our own sales force in the U.S. and expect to commercialize VEC-162 through a strategic partnership with a global pharmaceutical company.

Based on our current operating plans, and assuming the sale of shares of our common stock in this offering at an initial public offering price of $ per share (the mid-point of the price range set forth on the cover page of this prospectus), we believe that the proceeds from this offering, together with our existing cash, restricted cash and cash equivalents, will be sufficient to meet our anticipated operating needs until mid-2007, and after that time we will require additional capital. We believe that if we sell the shares of our common stock in this offering at an initial public offering price of $ per share ($1.00 lower than the mid-point of the price range set forth on the cover page), the resultant reduction in proceeds we receive from the offering would cause us to require additional capital earlier, in . In addition, in budgeting for our activities following this offering, we have relied on a number of assumptions, including assumptions that we will enroll approximately 600 patients in our Phase III iloperidone trial and that this trial will be completed in accordance with our expectations, that we will enroll approximately 400 patients in our VEC-162 Phase III trial for insomnia and that this trial will be completed in accordance with our expectations, that we will not engage in further business development activities, that we will not expend funds on the extended-release injectable formulation of, or bipolar indication for, iloperidone or on a Phase II trial of VEC-162 for depression, that we will be able to continue the manufacturing of

our product candidates at commercially reasonable prices, that we will be able to retain our key personnel, and that we will not incur any significant contingent liabilities. We may need to raise additional funds more quickly if one or more of our assumptions prove to be incorrect or if we choose to expand our product development efforts more rapidly than we presently anticipate, and we may decide to raise additional funds even before we need them if the conditions for raising capital are favorable. We may seek to sell additional equity or debt securities or obtain a bank credit facility. The sale of additional equity or debt securities, if convertible, could result in dilution to our stockholders. The incurrence of indebtedness would result in increased fixed obligations and could also result in covenants that would restrict our operations.

We began our Phase III trial for iloperidone in November 2005. Prior to December 31, 2005, we incurred approximately $2.8 million in clinical costs related to this trial. We expect that between January 1, 2006 and December 31, 2006, we will incur approximately $15.2 million in clinical costs related to the trial, for clinical services rendered to us in connection with the continued screening of trial patients, the dosing of iloperidone to these patients, the assessment of efficacy and adverse events, if any, which are observed in these patients, and related administrative services. Between January 1, 2007 and December 31, 2007, we expect that we will incur approximately $9.8 million in costs related to the trial and for services rendered to us in connection with the analysis of trial data and the preparation of regulatory filings. Assuming that our trial is completed in early 2007 and that the outcome of this trial is sufficient to support the filing of an NDA, we expect to make such a filing in late 2007. We would then expect to launch iloperidone commercially in early 2009. However, the timing and costs of our iloperidone trial, and the time it takes to receive cash inflows from the sale of iloperidone, are highly dependent on facts and circumstances that we may not be able to control and are subject to a number of risks. For example, our trial may be delayed due to a failure of our clinical services provider to perform services in a timely or proper manner or by patients dropping out of the trial. Additionally, the trial may be unsuccessful in proving iloperidone's efficacy and safety, which would cause the filing of an NDA to be delayed indefinitely. Additionally, even if our trial is successful, delays in the approval process and subsequent commercial launch of iloperidone following our filing may occur if the FDA fails to attend to our filing in a timely manner or requires further data to approve iloperidone. We also may face further delays if we are unable to successfully develop, acquire, or enter into a partnering arrangement for sales and marketing capabilities, or if we do not have sufficient financial resources to undertake such a commercial launch. Please see "Risk Factors" for a more detailed discussion of these and other risks.

In February and June 2004 we entered into separate license agreements with Bristol-Myers Squibb Company and Novartis, respectively, for the exclusive rights to develop and commercialize our three compounds in clinical development. In partial consideration for these rights, we paid a $500,000 non-refundable fee for each compound. We are also obligated to make additional payments upon the achievement of specific clinical and commercial milestones, as well as the payment of product royalties based on the net sales of the licensed products. The amount, timing and likelihood of these potential payments will depend on the occurrence of future events that may or may not occur, such as the approval by the FDA for the sale of one or more of our product candidates.

*Revenues.* We generated some revenue during the period from March 13, 2003 (inception) to December 31, 2003 and during the year ended December 31, 2004 under research and development contracts that were derived principally from consulting agreements we entered

into during our start-up phase to defray research costs. We completed our obligations during those periods under these agreements and no longer seek such arrangements.

We have not generated any other operating revenue since our inception. Any revenue that we may receive in the near future is expected to consist primarily of license fees, milestone payments and research and development reimbursement payments to be received from partners. If our development efforts result in clinical success, regulatory approval and successful commercialization of our products, we could generate revenue from sales of our products and from receipt of royalties on sales of licensed products.

*Research and development expenses.* We expect our research and development expenses to increase as we continue to develop our product candidates. These expenses consist primarily of fees paid to third-party professional service providers in connection with the services they provide for our clinical trials, costs of contract manufacturing services, costs of materials used in clinical trials and research and development, depreciation of capital resources used to develop our products, and all related facilities costs. We expense research and development costs as incurred, including payments made to date under our license agreements. We believe that significant investment in product development is a competitive necessity and plan to continue these investments in order to realize the potential of our product candidates and pharmacogenetics and pharmacogenomics expertise. From inception through December 31, 2005, we incurred research and development expenses in the aggregate of approximately $26.3 million, including stock-based compensation expenses of approximately $791,000. We expect to incur licensing costs in the future that could be substantial, as we continue our efforts to evaluate potential in-license product candidates.

The following table summarizes our product development initiatives for the period from March 13, 2003 (inception) to December 31, 2003, and the years ended December 31, 2004 and December 31, 2005. Included in this table is the research and development expense recognized in connection with our product candidates in clinical development. Included in "Other product candidates" are the costs directly related to research initiatives for all other product candidates. The numbers in this table have not been audited.

| | March 13, 2003 (inception) to December 31, 2003(2) | Year ended December 31, 2004 | Year ended December 31, 2005 | March 13, 2003 (inception) to December 31, 2005 |
|---|---|---|---|---|
| Direct Project Costs(1) | | | | |
| Iloperidone | | $ 1,123,000 | $ 7,798,000 | $ 8,921,000 |
| VEC-162 | | 3,221,000 | 6,133,000 | 9,354,000 |
| VSF-173 | | 568,000 | 943,000 | 1,511,000 |
| Other Product Candidates | | 1,037,000 | 899,000 | 1,936,000 |
| Total Direct Product Costs | | 5,949,000 | 15,773,000 | 21,722,000 |
| Indirect Project Costs(1) | | | | |
| Facility(3) | | 259,000 | 247,000 | 506,000 |
| Depreciation | $ 69,000 | 345,000 | 375,000 | 789,000 |
| Other Indirect Overhead | 1,941,000 | 890,000 | 496,000 | 3,327,000 |
| Total Indirect Expenses | 2,010,000 | 1,494,000 | 1,118,000 | 4,622,000 |
| Total Research & Development Expenses | $ 2,010,000 | $ 7,443,000 | $ 16,891,000 | $ 26,344,000 |

(1) Many of our research and development costs are not attributable to any individual project because we share resources across several development projects. We record direct costs, including personnel costs and related benefits and stock-based compensation, on a project-by-project basis. We record indirect costs that support a number of our research and development activities in the aggregate.

(2) In 2003, there were no active development programs in process for our product candidates listed in the table.

(3) In 2003, all facility-related costs we re allocated to general and administrative expenses.

We have allocated $60.0 million of the proceeds of this offering for research and development, including clinical trials. Conducting clinical trials is a time-consuming and expensive process. Currently, iloperidone and VEC-162 are in Phase III trials, and VSF-173 may enter Phase II trials in late 2006. The commencement and rate of completion of clinical trials for our products may be delayed by many factors, including, but not limited to:

- lack of efficacy during the clinical trials
- unforeseen safety issues
- slower-than-expected rate of patient recruitment
- manufacturing delays
- government or regulatory delays

In addition, we may encounter regulatory delays or rejections as a result of many factors, including results that do not support our claims, perceived defects in the design of clinical trials and changes in regulatory policy during the period of product development. Our business, financial condition and results of operations may be adversely affected by any delays in, or termination of, our clinical trials or a determination by the FDA that the results of our trials are inadequate to justify regulatory approval. As part of our commercialization strategy, we

may seek to establish collaborative relationships for some of our products in order to help us develop and market some of these product candidates. There can be no assurance that we will be successful in doing so. As a result of these risks and uncertainties, we are unable to estimate the specific timing and future costs of our clinical development programs or the timing of material cash inflows, if any, from our product candidates.

*General and administrative expenses.* General and administrative expenses consist primarily of salaries and other related costs for personnel serving executive, finance, accounting, information technology and human resource functions. Other costs include facility costs not otherwise included in research and development expense and professional fees for legal and accounting services. We expect that our general and administrative expenses will increase as we add personnel and become subject to the reporting obligations applicable to public companies. From inception through December 31, 2005, we incurred general and administrative expenses in the aggregate of approximately $10.6 million, including stock-based compensation expenses of approximately $4.3 million.

*Stock-based compensation.* We have recorded stock-based compensation expense in connection with the grant of stock options to employees. Stock-based compensation for options granted to employees is the difference between the fair value for financial reporting purposes of our common stock on the date such options were granted and their exercise price. We recorded deferred stock-based compensation and additional paid-in capital of approximately $281,000 in the aggregate and approximately $18.8 million in the aggregate for the years ended December 31, 2004 and 2005, respectively, related to employee stock options granted below fair market value. These deferred amounts were recorded as a component of stockholders' equity and are being amortized as charges to operations over the vesting periods of the options. We recorded amortization of deferred stock-based compensation expense of approximately $23,000 and approximately $1.3 million in respect of these options for the years ended December 31, 2004 and 2005, respectively.

In August 2004, we approved a modification to an employee's stock option award at the time of employment termination. The modification was to accelerate a portion of the unvested stock options so the shares could be immediately exercisable. According to FASB Interpretation No. 44, *Accounting for Certain Transactions involving Stock Compensation* (FIN 44), the result of such a modification is to remeasure the stock options that were modified. The remeasurement of the stock options resulted in an immediate charge of approximately $15,000, which was included in general and administrative expense for the year ended December 31, 2004.

In February 2005, the board of directors approved a modification to all outstanding granted stock option awards, repricing the options from their original exercise price of $0.40 to $0.10. According to FIN 44, the result of such a modification is to account for the modified stock option awards as variable from the date of the modification to the date the awards are exercised, forfeited, or cancelled. For the year ended December 31, 2005, we remeasured approximately 1.1 million outstanding stock options, resulting in initial deferred stock compensation of approximately $1.7 million. Compensation expense relating to the remeasurement of modified stock options was approximately $3.8 million for the year ended December 31, 2005, which includes approximately $3.1 million of immediate stock compensation charges for vested shares at the time of remeasurement for the year ended December 31, 2005.

According to EITF 00-23, *Issues Related to the Accounting for Stock Compensation under APB Opinion No. 25 and FASB Interpretation No. 44,* FASB Interpretation No. 28, *Accounting for Stock Appreciation Rights and Other Variable Stock Option or Award Plans and interpretation of APB Opinions No. 15 and 25* (FIN 28), is required for variable awards. FIN 28 specifies that compensation should be measured at the end of each period as the amount by which the quoted market value of the shares of the enterprises's stock covered by the grant exceeds the option price or value specified under the plan and that amount should be accrued as a charge to expense over the periods the employee performs the related services.

As of January 1, 2006 the Company adopted SFAS 123R—*Share-Based Payment* using the modified prospective method of implementation and adopted the accelerated vesting method. According to the modified prospective method, the previously issued financial statements will not be adjusted and the deferred compensation balances recorded within the shareholders' equity will be eliminated as of January 1, 2006 against the additional paid-in capital account. At January 1, 2006, there was approximately $19.7 million in unamortized compensation expense under the fair value method that will be recognized in future periods.

The table below summarizes the historic stock-based compensation expense from inception to December 31, 2005 and future stock-based compensation expense resulting from the options granted to employees prior to December 31, 2005. This table does not reflect the possible modifications that may occur to the option grants for such events as accelerations, terminations or exercises and expenses related to future option grants:

| | Stock based compensation from March 31, 2003 (inception) to December 31, 2005(1) | Future stock-based compensation(2) | | | | |
|---|---|---|---|---|---|---|
| | | Total | 2006 | 2007 | 2008 | 2009 |
| | | | (in thousands) | | | |
| Stock options granted through December 31, 2005 that were below fair value | $ 1,299 | $ 18,730 | $ 5,024 | $ 5,026 | $ 4,978 | $ 3,702 |
| Modification to an employee's stock option awards | 15 | — | — | — | — | — |
| Remeasurement of stock options modified in February 2005 | 3,826 | 948 | 621 | 266 | 61 | — |
| Total stock based compensation | 5,140 | 19,678 | 5,645 | 5,292 | 5,039 | 3,702 |

(1) Historic stock-based compensation prior to implementation of SFAS 123R.

(2) Future stock-based compensation using the modified prospective method of implementation according to SFAS 123R.

*Beneficial conversion feature.* In September 2005, we completed the sale of an additional 15,040,654 shares of Series B Preferred Stock for proceeds of approximately $18.5 million. After evaluating the fair value of our common stock obtainable upon conversion by the stockholders, we determined that the issuance of the Series B Preferred Stock sold in September 2005 resulted in a beneficial conversion feature calculated in accordance with EITF Issue No. 98-5, *Accounting for Convertible Securities with Beneficial Conversion Features or Contingently Adjustable Conversion Ratios,* as interpreted by EITF Issue No. 00-27, *Application of Issue No. 98-5 to Certain Convertible Instruments,* of approximately $18.5 million which was fully accreted in September 2005 and is recorded as a deemed dividend to preferred stockholders for the year ended December 31, 2005. Likewise, in December 2005, we completed the sale of an additional 12,195,129 shares of Series B Preferred Stock for proceeds of an additional $15.0 million. After evaluating the fair value of our common stock obtainable upon conversion by the stockholders, we determined that the issuance of the Series B Preferred Stock sold in December 2005 resulted in a beneficial conversion feature calculated in accordance with EITF Issue No. 98-5, as interpreted by EITF Issue No. 00-27, of approximately $15.0 million which was fully accreted in December 2005 and is recorded as a deemed dividend to preferred stockholders for the year ended December 31, 2005.

*Interest and other income, net.* Interest income consists of interest earned on our cash, restricted cash and cash equivalents and short-term investments. Interest expense consists of interest incurred on equipment debt. Other expense, net, consists of foreign currency loss related to our wholly-owned foreign subsidiary located in Singapore.

We have a limited history of operations. We anticipate that our quarterly results of operations will fluctuate for the foreseeable future due to several factors, including any possible payments made or received pursuant to licensing or collaboration agreements, progress of our research and development efforts, and the timing and outcome of clinical trials and related possible regulatory approvals. Our limited operating history makes predictions of future operations difficult or impossible. Since our inception, we have incurred significant losses. As of December 31, 2005, we had a deficit accumulated during the development stage of approximately $36.3 million. We anticipate incurring additional losses, which may increase, for the foreseeable future.

## Results of operations

**Year ended December 31, 2005 compared to year ended December 31, 2004**

*Revenues.* Revenues decreased approximately $34,000 for the year ended December 31, 2005 to zero. Revenue earned in 2004 was derived principally from consulting agreements we entered into during our start-up phase under research and development contracts. We have completed our obligations under these agreements and will not recognize any related contract revenue in 2005.

*Research and development expenses.* Research and development expenses increased by approximately $9.5 million, or 128%, to approximately $16.9 million for the year ended December 31, 2005 compared to approximately $7.4 million for the year ended December 31, 2004. Research and development expense consists of direct costs which include salaries and related costs of research and development personnel, stock-based compensation, and the costs of consultants, materials and supplies associated with research and development projects, as well as clinical activities. Indirect research and development costs include facilities, depreciation, and other indirect overhead costs.

The following table discloses the components of research and development expenses reflecting all of our project expenses:

| Research and development expenses | Year ended December 31, 2004 | 2005 |
|---|---|---|
| Direct project costs: | | |
| Personnel, benefits and related costs | $ 1,155,000 | $ 1,962,000 |
| Stock-based compensation | 2,000 | 789,000 |
| Contract research and development, consultants, materials and other costs | 3,876,000 | 6,747,000 |
| Clinical trials | 916,000 | 6,275,000 |
| Total direct costs | 5,949,000 | 15,773,000 |
| Indirect project costs | 1,494,000 | 1,118,000 |
| Total | $ 7,443,000 | $ 16,891,000 |

Direct costs increased approximately $9.8 million primarily as a result of approximate increases of $6.7 million, $2.9 million and $0.4 million, relating to clinical development activities for iloperidone, VEC-162 and VSF-173, respectively. During the year ended December 31, 2005, we conducted additional clinical development and manufacturing work on iloperidone as we prepared for and commenced its Phase III trial. We also conducted a Phase II clinical trial for VEC-162. Personnel, benefits and related costs increased approximately $808,000 for the year ended December 31, 2005 due to an increase in personnel to support the development and clinical trial activities for iloperidone and VEC-162.

Contract research and development, consulting, materials and other direct costs increased approximately $2.9 million for the year ended December 31, 2005, primarily due to regulatory and manufacturing-related development costs of approximately $2.9 million incurred in connection with the manufacturing of clinical supply materials for the iloperidone Phase III and the VEC-162 clinical trial programs. Prior to FDA approval of our products, manufacturing-related costs are included in research and development expense. Clinical trials expense increased approximately $5.4 million for the year ended December 31, 2005 primarily due to the cost incurred as we prepared for and commenced our Phase III iloperidone clinical trial that began in the fourth quarter of 2005 and the costs related to the Phase II VEC-162 trial that was conducted in 2005. Indirect project costs also decreased by approximately $376,000 for the year ended December 31, 2005 due primarily to the elimination of contract manufacturing activities we previously conducted.

In 2006 and thereafter we expect research and development expenses to continue to increase substantially as we increase our research and development efforts and as our existing and future product candidates proceed through clinical trials.

*General and administrative expenses.* General and administrative expenses increased approximately $5.3 million, or 249%, to approximately $7.4 million for the year ended December 31, 2005 from approximately $2.1 million for the year ended December 31, 2004.

The following table discloses the components of our general and administrative expenses:

| General and administrative expenses | Year ended December 31, 2004 | 2005 |
|---|---|---|
| Salaries, benefits and related costs | $ 906,000 | $ 1,411,000 |
| Stock-based compensation | 36,000 | 4,313,000 |
| Legal and consulting expenses | 690,000 | 899,000 |
| Other expenses | 487,000 | 773,000 |
| Total | $ 2,119,000 | $ 7,396,000 |

General and administrative expenses consist of professional fees, salaries and related costs for executive and other administrative personnel and facility costs. Salaries, benefits and related costs increased approximately $505,000 for the year ended December 31, 2005 due to an increase in personnel as we continued to develop the administrative structure to support the development and clinical trial activities for iloperidone, VEC-162 and our other product candidates. Stock-based compensation expense was approximately $4.3 million for the year ended December 31, 2005 and approximately $36,000 for the same period in 2004.

Legal and consulting costs increased approximately $209,000 for the year ended December 31, 2005 due primarily to a higher level of consulting activity in 2005 in support of business development and market research activities related to our lead product candidates. Other expenses increased approximately $286,000 for the year ended December 31, 2005, primarily due to insurance and taxes.

In 2006 and thereafter we expect our general and administrative expenses to increase substantially. These increased expenses are expected to be necessary to support our discovery and development efforts and our commercial development activities and to fulfill our reporting and other regulatory obligations applicable to public companies.

*Interest income, net.* Net interest income in the year ended December 31, 2005 was approximately $410,000 compared to net interest income of approximately $59,000 in the year ended December 31, 2004. Interest income was higher in 2005 due to higher average cash balances for the year and higher short-term interest rates which generated substantially higher interest income than in 2004.

Our interest income and expense for the year ended December 31, 2004 and the year ended December 31, 2005 are disclosed on the following table:

| | Year ended December 31, 2004 | 2005 |
|---|---|---|
| Interest income | $ 101,000 | $ 436,000 |
| Interest expense | (42,000) | (26,000) |
| Total, net | $ 59,000 | $ 410,000 |

**Year ended December 31, 2004 compared to period from March 13, 2003 (inception) to December 31, 2003**

*Revenues.* We recorded revenues of approximately $34,000 and approximately $48,000 for 2004 and 2003, respectively. Revenue earned in 2004 and 2003 was derived principally from consulting agreements we entered into during our start-up phase under research and development contracts. We completed our obligations under these agreements and will not recognize any related contract revenue in 2005.

*Research and development expenses.* Research and development expenses increased approximately $5.4 million, or 270%, to approximately $7.4 million for the year ended December 31, 2004 compared to approximately $2.0 million for the period from March 13, 2003 (inception) to December 31, 2003.

The following table discloses the components of research and development expenses reflecting all of our project expenses:

| Research and development expenses | Period from March 13, 2003 (inception) to December 31, 2003 | Year ended December 31, 2004 |
|---|---|---|
| Direct project costs: | | |
| Personnel, benefits and related costs | $ — | $ 1,155,000 |
| Stock-based compensation | — | 2,000 |
| Contract R&D, consultants, materials and other costs | — | 3,876,000 |
| Clinical trials | — | 916,000 |
| Total direct costs | — | 5,949,000 |
| Indirect project costs | 2,010,000 | 1,494,000 |
| Total | $ 2,010,000 | $ 7,443,000 |

Direct costs increased approximately $5.9 million from zero as a result in the shift from contract development activities to the clinical development of iloperidone and VEC-162. Personnel, benefits and related costs increased approximately $1.2 million in 2004 due to an increase in personnel to support the development and clinical trial activities for iloperidone and VEC-162. Personnel costs associated with contract development activities were charged to indirect project costs for the period from March 13, 2003 (inception) to December 31, 2003.

Contract research and development, consulting, materials and other direct costs increased approximately $3.9 million primarily due to clinical manufacturing-related development costs incurred in connection with the manufacturing of clinical supply materials for iloperidone and VEC-162. Prior to FDA approval of our products, manufacturing-related costs are included in research and development expense. Clinical trials expense increased approximately $916,000 due to the cost incurred for the VEC-162 Phase II clinical trial.

Indirect project costs also decreased by approximately $517,000, due primarily to the elimination of contract manufacturing activities we previously conducted.

*General and administrative expenses.* General and administrative expenses increased approximately $1.0 million, or 101%, to approximately $2.1 million for the year ended

December 31, 2004 compared to approximately $1.1 million for the period from March 13, 2003 (inception) to December 31, 2003.

The following table discloses the components of our general and administrative expenses:

| General and administrative expenses | Period from March 13, 2003 (inception) to December 31, 2003 | Year ended December 31, 2004 |
|---|---|---|
| Salaries, benefits and related costs | $ 21,000 | $ 906,000 |
| Stock-based compensation | — | 36,000 |
| Legal and consulting expenses | 620,000 | 690,000 |
| Other expenses | 412,000 | 487,000 |
| Total | $ 1,053,000 | $ 2,119,000 |

General and administrative expenses consist of professional fees, salaries and related costs for executive and other administrative personnel, and facility costs. Salaries, benefits and related costs increased approximately $885,000 in 2004 due to an increase in personnel as we continued to develop the administrative structure to support the development and clinical trial activities of our product candidates.

Legal and consulting costs and other expenses increased by approximately $70,000 due primarily to a higher level of consulting activity in 2004 in support of the business development and market research activities related to our lead product candidates.

*Interest and other income, net.* Net interest income for the year ended December 31, 2004 was approximately $59,000 compared to net interest income of approximately $45,000 for the period from March 13, 2003 (inception) to December 31, 2003. The increase in interest income was attributable to higher average cash balances for the year ended December 31, 2004, and partially offset by an increase in interest expense attributable to an increase in our equipment term loan obligations.

Our interest income and expenses for 2004 and for the period from March 13, 2003 (inception) to December 31, 2003 are disclosed on the following table:

| | Period from March 13, 2003 (inception) to December 31, 2003 | Year ended December 31, 2004 |
|---|---|---|
| Interest income | $ 53,000 | $ 101,000 |
| Interest expense | (8,000) | (42,000) |
| Total, net | $ 45,000 | $ 59,000 |

## Liquidity and capital resources

We have funded our operations through December 31, 2005 principally with the proceeds of approximately $62.0 million from preferred stock offerings:

| Issue | Year | No. shares | Price per share | Approximate amount (in millions) |
|---|---|---|---|---|
| Preferred stock, Series A | March, 2003 | 10,000,000 | $ 1.00 | $ 10.0 |
| Preferred stock, Series B | September, 2004 | 15,040,654 | $ 1.23 | $ 18.5 |
| Preferred stock, Series B | September, 2005 | 15,040,654 | $ 1.23 | $ 18.5 |
| Preferred stock, Series B | December, 2005 | 12,195,129 | $ 1.23 | $ 15.0 |
| Total | | 52,276,437 | | $ 62.0 |

Each share of preferred stock is convertible into one share of our common stock.

In September 2005, we completed the sale of an additional 15,040,654 shares of Series B Preferred Stock for proceeds of approximately $18.5 million. After evaluating the fair value of the common stock obtainable upon conversion by the stockholders, we determined that the issuance of the Series B Preferred Stock sold in September 2005 resulted in a beneficial conversion feature of approximately $18.5 million which was fully accreted in September 2005 and is recorded as a deemed dividend to preferred stockholders for the year ended December 31, 2005.

On December 9, 2005 we completed the final closing of the Series B financing pursuant to which we sold an additional 12,195,129 shares of Series B Preferred Stock at $1.23 per share, or an aggregate purchase price of approximately $15.0 million. As a result, we recorded an additional beneficial conversion charge in the form of deemed dividends of approximately $15.0 million for the year ended December 31, 2005.

In 2003, we entered into a $515,147 line of credit facility to finance the purchase of specified equipment based on lender-approved schedules. The interest rate was fixed at 9.3% per annum. We granted a security interest in the assets purchased under the credit line. During 2005 and 2004, we had no draw downs under the line of credit. During 2005, 2004 and 2003, we repaid approximately $173,000, $156,000 and $45,000 on the line of credit, respectively. The total indebtedness relating to this line of credit was approximately $142,000, $316,000 and $470,000 as of December 31, 2005, 2004 and 2003, respectively.

### Cash and cash equivalents, restricted cash and short-term investments

At December 31, 2005, cash, restricted cash and cash equivalents were approximately $21.0 million compared to approximately $16.3 million at December 31, 2004.

Our cash and cash equivalents are highly liquid investments with a maturity of 90 days or less at date of purchase and consist of time deposits, investments in money market funds with commercial banks and financial institutions, and commercial paper of high-quality corporate issuers. As of December 31, 2005, we held $10.1 million in short-term investments, consisting of $6.1 million of U.S. government agencies securities and $4.1 million of U.S. corporate debt securities.

We maintain cash balances with financial institutions in excess of insured limits, but do not anticipate any losses with respect to such cash balances.

### Cash flow

Net cash used in operations was approximately $17.7 million and approximately $8.6 million for the years ended December 31, 2005 and 2004, respectively. The net loss for the year ended December 31, 2005 of approximately $23.9 million was offset primarily by non-cash charges for depreciation and amortization of approximately $424,000, stock-based compensation of approximately $5.1 million, an increase in accrued expenses and accounts payable of approximately $1.9 million and $1.5 million, respectively, principally related to clinical trial expenses, and other net changes in working capital. Net cash used in investing activities for the year ended December 31, 2005 was approximately $10.8 million and consisted primarily of net purchases of short-term investments of approximately $10.1 million, equipment purchases of approximately $292,000 and an investment of approximately $430,000 in restricted cash for a security deposit on our new leased corporate research and development facility. Net cash provided by financing activities for the year ended December 31, 2005 was approximately $33.3 million, consisting primarily of net proceeds from the issuance of Series B Preferred Stock of approximately $33.5 million, offset primarily by payments of equipment debt financing obligations of approximately $173,000.

Net cash used in operations was approximately $8.6 million and approximately $2.1 million for the year ended December 31, 2004 and the period from March 13, 2003 (inception) to December 31, 2003, respectively. The net loss for 2004 of approximately $9.5 million was partially offset by non-cash charges for depreciation and amortization of approximately $377,000, an increase in accrued expenses of approximately $416,000 and other net changes in working capital. Net cash used from investing activities for the year ended December 31, 2004 was approximately $415,000 and consisted primarily of equipment purchases. Net cash from financing activities for 2004 was approximately $18.1 million, which consists primarily of net proceeds from the issuance of Series B Preferred Stock of approximately $18.3 million, offset by principal payments on notes payable and capital lease obligations of approximately $200,000.

### Contractual obligations and commitments

The following table summarizes our major contractual obligations at December 31, 2005 and the effects such obligations are expected to have on our liquidity and cash flows in future periods.

| Contractual obligations (in thousands) | Total | 2006 | 2007 | 2008 | 2009 | 2010 | After 2010 |
|---|---|---|---|---|---|---|---|
| Operating lease obligations | $ 5,318 | $ 503 | $ 642 | $ 536 | $ 427 | $ 440 | $ 2,770 |
| Short and long-term debt | 147 | 147 | — | — | — | — | — |
| Total contractual cash obligations | $ 5,465 | $ 650 | $ 642 | $ 536 | $ 427 | $ 440 | $ 2,770 |

We entered into a five-year non-cancelable operating lease agreement for office and laboratory space in June 2003. The lease contains an option to renew for an additional five years on the same terms and conditions and contains a 3% rent escalation clause.

In August 2005, we entered into a ten-year and six-month non-cancelable operating lease agreement for office and laboratory space at a new facility, which is renewable for an additional five-year period at the end of the original term. The lease expires in June 2016. We took possession of the lease space in January 2006. The lease includes rent abatement and scheduled annual base rent increases of 3% over the term of the lease. The total amount of the base rent payments and rent abatement will be charged to expense on a straight-line

method over the term of the lease (excluding renewal periods). In conjunction with a letter of credit, we collateralized the operating lease with a restricted cash deposit in the amount of approximately $430,000 in September 2005, which is recorded as non-current restricted cash at December 31, 2005. Total leasehold improvements, net of landlord allowances, will be approximately $600,000 for our new office and laboratory facility.

In August 2005, we notified the landlord of our old lease space of our intention to exercise our sub-lease rights in order to enter into a lease for a larger office and laboratory facility. We vacated this old space in January 2006. According to SFAS 146 *Accounting for Costs Associated with Exit or Disposal Activities*, a liability for costs that will continue to be incurred under a contract for its remaining term without economic benefit to the company shall be recognized and measured when the company ceases using the right conveyed by the lease agreement, reduced by estimated sublease rentals that could be reasonably obtained. We expect to incur a charge of approximately $260,000 in the first quarter of 2006 relating to our move to our new office and laboratory facility in January 2006. We have included in the table above operating lease obligations related to the old lease space of approximately $233,000, $240,000 and $122,000 for 2006, 2007 and 2008, respectively.

In March 2004, we entered into a capital lease obligation in order to finance certain capital equipment purchases of approximately $92,000. This capital lease had an interest rate of 7.5% and was payable in monthly installments of $3,312 through April 2006. In February 2005, we cancelled this capital lease obligation and settled the obligation in full.

We recently entered into agreements with clinical research organizations and other outside contractors who will be responsible for conducting and monitoring our clinical trials for iloperidone and VEC-162. These contractual obligations are not reflected in the table above because we may terminate them on no more than 60 days' notice without incurring additional charges (other than charges for work completed but not paid for through the effective date of termination and other costs incurred by our contractors in closing out work in progress as of the effective date of termination). Assuming that our upcoming Phase III trials for iloperidone and VEC-162 are completed in accordance with our expectations, we will incur approximately $20.9 million in costs in 2006, and $9.8 million in costs in 2007, for clinical services rendered in connection with these trials.

In February and June 2004, we entered into separate licensing agreements with Bristol-Myers Squibb and Novartis, respectively, for the exclusive rights to develop and commercialize our three compounds in clinical development. In partial consideration for these rights, we paid a $500,000 non-refundable fee for each compound. We are obligated to make additional payments under the conditions in the agreements upon the achievement of specified clinical, regulatory and commercial milestones. If the products are successfully commercialized we will be required to pay certain royalties based on net sales for each of the licensed products. The amount, timing and likelihood of these payments are unknown and will depend on the successful outcome of future clinical trials, regulatory filings, favorable FDA regulatory approvals and growth in product sales.

We expect to incur losses from operations for the foreseeable future. We expect to incur increasing research and development expenses, including expenses related to additions to personnel and clinical trials. We expect that our general and administrative expenses will increase in the future as we expand our business development, legal and accounting staff, add infrastructure and incur additional costs related to being a public company, including directors' and officers' insurance, investor relations programs and increased professional fees. Our future

capital requirements will depend on a number of factors, including our continued progress of our research and development of product candidates, the timing and outcome of regulatory approvals, payments received or made under potential collaborative agreements, the costs involved in preparing, filing, prosecuting, maintaining, defending and enforcing patent claims and other intellectual property rights, the acquisition of licenses to new products or compounds, the status of competitive products, the availability of financing and our or our potential partners' success in developing markets for our product candidates. Based on our current operating plans, and assuming the sale of shares of our common stock in this offering at an initial public offering price of $ per share (the mid-point of the price range set forth on the cover page of this prospectus), we believe that the proceeds from this offering, together with our existing cash, restricted cash and cash equivalents, will be sufficient to meet our anticipated operating needs until mid-2007, and after that time we will require additional capital. We believe that if we sell the shares of our common stock in this offering at an initial public offering price of $ per share ($1.00 lower than the mid-point of the price range set forth on the cover page), the resultant reduction in proceeds we receive from the offering would cause us to require additional capital earlier, in . Without the proceeds from this offering, we believe that our existing cash, restricted cash and cash equivalents will be sufficient to fund our operating expenses, debt repayments and capital expenditures until mid-2006 due to our existing clinical trial commitments. We are also prepared to raise additional capital from our current investors in order to execute on our existing clinical trial commitments. In the absence of our ability to raise additional private equity capital, we are also prepared and have the ability to curtail our existing clinical trial commitments and extend them in such a manner that provides us with operating funds through the remainder of 2006 and into 2007.

Except for the equipment debt facility described above, we have no other lines of credit or other committed sources of capital. To the extent our capital resources are insufficient to meet future capital requirements, we will need to raise additional capital or incur indebtedness to fund our operations. We cannot assure you that additional debt or equity financing will be available on acceptable terms, if at all. If adequate funds are not available, we may be required to delay, reduce the scope of or eliminate our research and development programs, reduce our commercialization efforts or obtain funds through arrangements with collaborative partners or others that may require us to relinquish rights to certain product candidates that we might otherwise seek to develop or commercialize. Any future funding may dilute the ownership of our equity investors.

## Quantitative and qualitative disclosures about market risk

Our exposure to market risk is currently confined to our cash and cash equivalents, restricted cash and short-term investments that have maturities of less than 12 months. We currently do not hedge interest rate exposure. We have not used derivative financial instruments for speculation or trading purposes. Because of the short-term maturities of our cash and cash equivalents, restricted cash and short-term investments, we do not believe that an increase in market rates would have any significant impact on the realized value of our investments, but may increase the interest expense associated with any long-term debt or long-term lease obligations.

## Effects of inflation

Our most liquid assets are cash, restricted cash and cash equivalents. Because of their liquidity, these assets are not directly affected by inflation. We also believe that we have intangible assets in the value of our intellectual property. In accordance with generally accepted accounting principles, we have not capitalized the value of this intellectual property on our balance sheet. Due to the nature of this intellectual property, we believe that these intangible assets are not affected by inflation. Because we intend to retain and continue to use our equipment, furniture and fixtures and leasehold improvements, we believe that the incremental inflation related to replacement costs of such items will not materially affect our operations. However, the rate of inflation affects our expenses, such as those for employee compensation and contract services, which could increase our level of expenses and the rate at which we use our resources.

## Off balance sheet arrangements

Other than outstanding warrants exercisable for up to 166,600 shares of our common stock, we have no “off balance sheet arrangements”, as defined by Item 303(a)(4) of the SEC’s Regulation S-K. Please see note 11 of our consolidated financial statements for a description of the warrants.

## Recent accounting pronouncements

In December 2004, the FASB issued SFAS 123R, *Share-Based Payment,* a revision of SFAS 123, *Accounting for Stock-based Compensation.* SFAS 123R requires public companies to recognize expense associated with share-based compensation arrangements, including employee stock options, using a fair value-based option pricing model, and eliminates the alternative to use APB 25’s intrinsic value method of accounting for share-based payments. In April 2005, the SEC announced that the effective date to implement SFAS 123R has been delayed for certain public companies. Accordingly, we plan to begin recognizing the expense associated with our share-based payments, as determined using a fair value-based method, in our statement of operations beginning on January 1, 2006. Adoption of the expense provisions of SFAS 123R is expected to have a material impact on our results of operations. The standard generally allows two alternative transition methods for public companies: modified prospective application without restatement of prior interim periods in the year of adoption; and retroactive application with restatement of prior financial statements to include the same amounts that were previously included in pro forma disclosures. On January 1, 2006 we adopted SFAS 123R — *Share-Based Payment* using the modified prospective method of implementation and adopted the accelerated vesting method. According to modified prospective method the previously issued financial statements will not be adjusted and the deferred compensation balances recorded within the shareholders’ equity will be eliminated as of January 1, 2006 against the additional paid-in capital account. At January 1, 2006, there is approximately $19.7 million in unamortized compensation expense under the fair value method that will be recognized in the future over the remaining service periods through 2009.

In order to provide implementation guidance related to SFAS 123R, the SEC issued Staff Accounting Bulletin (SAB) No. 107, *Share-Based Payment* in March 2005. SAB 107 provides guidance on numerous issues such as valuation methods (including assumptions such as expected volatility and expected term), the classification of compensation expense, capitalization of compensation cost related to share-based payment arrangements, the

accounting for income tax effects of share-based payment arrangements upon adoption of SFAS 123R, and disclosures in MD&A subsequent to adoption of SFAS 123R.

SFAS No. 154, *Accounting Changes and Error Corrections— a Replacement of APB Opinion No. 20 and FASB Statement No. 3* was issued by the FASB in May 2005. This Statement replaces APB Opinion No. 20, *Accounting Changes*, and FASB Statement No. 3, *Reporting Accounting Changes in Interim Financial Statements,* and changes the requirements for the accounting for and reporting of a change in accounting principle. SFAS No. 154 applies to all voluntary changes in accounting principle and requires retrospective application to prior periods' financial statements of changes in accounting principle, unless it is impracticable to determine either the period-specific effects or the cumulative effect of the change. This Statement also requires that a change in depreciation, amortization, or depletion method for long-lived, non-financial assets be accounted for as a change in accounting estimate affected by a change in accounting principle. This statement is effective for accounting changes and corrections of errors made in fiscal years beginning after December 15, 2005. SFAS No. 154 is not expected to have a material effect on our consolidated financial statements.

In June 2005, the FASB Staff issued FASB Staff Position 150-5 (FSP 150-5), *Issuer's Accounting under FASB Statement No. 150 for Freestanding Warrants and Other Similar Instruments on Shares that are Redeemable.* FSP 150-5 addresses whether freestanding warrants and other similar instruments on shares that are redeemable, either puttable or mandatorily redeemable, would be subject to the requirements of FASB Statement No. 150, *Accounting for Certain Financial Instruments with Characteristics of Both Liabilities and Equity,* regardless of the timing of the redemption feature or the redemption price. The FSP is effective after June 30, 2005. Adoption of the FSP did not have a material effect on our financial condition or results of operations.

In November 2005, the FASB Staff issued FASB Staff Position ("FSP") FAS 115-1, *The Meaning of Other-Than-Temporary Impairment and Its Application to Certain Investments*. FSP FAS 115-1 addresses the determination as to when an investment is considered impaired, whether that impairment is other than temporary, and the measurement of an impairment loss. This FSP also includes accounting considerations subsequent to the recognition of an other-than-temporary impairment and requires certain disclosures about unrealized losses that have not been recognized as other-than-temporary impairments. The guidance in this FSP amends FASB Statements No. 115, *Accounting for Certain Investments in Debt and Equity Securities*, and No. 124, *Accounting for Certain Investments Held by Not-for-Profit* Organizations, and APB Opinion No. 18, *The Equity Method of Accounting for Investments in Common Stock*. The guidance in this FSP shall be applied to reporting periods beginning after December 15, 2005. Earlier application is permitted. FSP FAS 115-1 is not expected to have a material effect on the Company's consolidated financial statements.

## Critical accounting policies

Our discussion and analysis of our financial condition and results of operations are based on our consolidated 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, including those related to revenue recognition, accrued expenses, fair valuation of stock related to stock-based compensation and income taxes. We based our estimates on

historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

We believe the following critical accounting policies affect our more significant judgments and estimates used in the preparation of our financial statements.

*Accrued expenses.* As part of the process of preparing financial statements we are required to estimate accrued expenses. This process involves identifying services that have been performed on our behalf and estimating the level of service performed and the associated cost incurred for such service as of each balance sheet date in our financial statements. Examples of estimated accrued expenses include professional service fees, such as lawyers and accountants, and contract service fees such as amounts paid to clinical monitors, data management organizations and investigators in conjunction with clinical trials, and fees paid to contract manufacturers in conjunction with the production of clinical materials. In connection with such service fees, our estimates are most affected by our understanding of the status and timing of services provided relative to the actual levels of services incurred by such service providers. The majority of our service providers invoice us monthly in arrears for services performed. In the event that we do not identify certain costs that have begun to be incurred or we under- or over-estimate the level of services performed or the costs of such services, our reported expenses for such period would be too low or too high. The date on which certain services commence, the level of services performed on or before a given date and the cost of such services are often subject to our judgment. We make these judgments based upon the facts and circumstances known to us in accordance with generally accepted accounting principles.

*Stock-based compensation.* We have elected to follow APB Opinion No. 25, *Accounting for Stock Issued to Employees,* and related interpretations, in accounting for our stock-based compensation plans, rather than the alternative fair value accounting method provided for under SFAS No. 123, *Accounting for Stock-Based Compensation*. In the notes to our financial statements we provide pro forma disclosures in accordance with SFAS No. 123 and related pronouncements. We account for transactions in which services are received in exchange for equity instruments based on the fair value of such services received from non-employees or of the equity instruments issued, whichever is more reliably measured, in accordance with SFAS No. 123 and EITF 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*. The two factors which most affect charges or credits to operations related to stock-based compensation are the fair value of the common stock underlying stock options for which stock-based compensation is recorded and the volatility of such fair value. If our estimates of the fair value of these equity instruments are too high or too low, it would have the effect of overstating or understating expenses.

Given the lack of an active public market for our common stock, our board of directors determined the fair value of our common stock for stock option awards and we did not employ a third party valuation firm to determine fair value. In establishing our estimates of fair value, we considered the guidance set forth in the AICPA Practice Guide, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*, and made retrospective

determinations of fair value. Information on stock option grants, net of forfeitures, during the previous two years ended December 31, 2005 is summarized as follows:

| Date of issuance | Type of equity issuance | Number of options granted | Exercise price(1) | Fair market value estimate per common share | Intrinsic value per share |
|---|---|---|---|---|---|
| 06/15/04 | Employee Options | 11,400 | $ 0.10 | $ 0.97 | $ 0.87 |
| 09/01/04 | Employee Options | 303,400 | $ 0.10 | $ 1.23 | $ 1.13 |
| 12/06/04 | Employee Options | 2,573 | $ 0.10 | $ 1.72 | $ 1.62 |
| 02/10/05 | Employee Options | 694,739 | $ 0.10 | $ 3.18 | $ 3.08 |
| 04/05/05 | Employee Options | 92,000 | $ 0.10 | $ 4.83 | $ 4.73 |
| 08/15/05 | Employee Options | 51,500 | $ 0.10 | $ 5.09 | $ 4.99 |
| 09/28/05 | Employee Options | 2,055,272 | $ 0.10 | $ 5.09 | $ 4.99 |
| 10/03/05 | Employee Options | 3,000 | $ 0.10 | $ 5.19 | $ 5.09 |
| 11/14/05 | Employee Options | 275,000 | $ 0.25 | $ 5.19 | $ 4.94 |
| 12/29/05 | Employee Options | 1,187,763 | $ 1.43 | $ 5.19 | $ 3.76 |

(1) The board of directors approved a modification to all outstanding stock option awards that were granted prior to February 10, 2005, repricing the options from their original exercise price of $0.40 to $0.10. According to FIN 44, the result of such a modification is to account for the modified stock option awards as variable from the date of the modification to the date the awards are exercised, forfeited, or cancelled. We remeasured the modified awards that were outstanding at the end of each quarter during the year ended December 31, 2005.

In the absence of a public trading market, and as a clinical-stage company with no significant revenues, the board of directors believes that it is appropriate to consider a range of factors in determining the fair value of the common stock at each option grant date. These factors include:

- Pricing of private sales of our preferred stock
- Prior valuations of stock grants and preferred stock sales and the effect of events, including the progression of our product candidates, that have occurred between the time of the grants or sales
- Comparative rights and preferences of the security being granted compared to the rights and preferences of our other outstanding equity
- Comparative values of public companies discounted for the risk and limited liquidity provided for in the shares we are issuing
- Perspective provided by valuation specialists
- Any perspective provided by any investment banks, including the likelihood of an initial public offering and
- General economic trends

As a result of initiating this offering, we have revised our estimate of the fair value of our common stock for the previous two years beginning January 1, 2004 for financial reporting purposes. This was done retrospectively by management, a related party, and we did not obtain contemporaneous valuations from an unrelated valuation specialist. In reassessing the value of our common stock in 2004 and 2005, we considered the valuations received from several investment banks in November 2005 in preparation for a potential initial public offering which was equivalent to approximately $5.19 per common share on a fully-diluted basis. We also considered the price we received in September 2004 for our Series B Preferred Stock

because this was an arm's-length transaction. After considering the preferred stock preferences it was determined that the fair value of the preferred stock at the date of issuance was equivalent to the fair value of the common stock on a fully-diluted basis.

Based on the $5.19 value per share (fully-diluted basis), we retrospectively assessed the fair value of common stock for each date on which stock options were granted. In assessing the value of the common stock at each grant date, management considered the factors listed above, including the achievement of success for the following key drivers: license agreements, clinical trials, and strong management and infrastructure.

- *License agreements:* Given the importance of these license agreements and the opportunity for us to develop our iloperidone and VEC-162 compounds into drugs for commercial sale, the value for each license agreement increased from the period the agreements were first entered through the end of 2005.
- *Clinical trials:* We believe that our success in our clinical development programs for iloperidone and VEC-162 has created additional value. Our iloperidone product candidate entered Phase III clinical trials in 2005 for the treatment of schizophrenia. Our VEC-162 product candidate completed a successful phase II clinical trial in 2005 and initiated a phase III clinical trial in February 2006 for the treatment of insomnia. Our clinical trial development programs have resulted in the increase in value of the Company for the period beginning June 2004 through the end of 2005.
- *Strong management and infrastructure:* The collection of a team of expert scientists and the Chief Executive Officer, along with other key personnel, such as the Chief Business Officer, VP of Regulatory Affairs, VP of Manufacturing, and Chief Financial Officer, has provided an increase in value to the Company at each hire date, beginning at the inception of the Company through the end of 2005.

As a result of assessing these drivers based on their importance to creating value for the Company, we have determined that the fair value of our common stock on a fully-diluted basis steadily increased from $0.97 per share at March 31, 2004 to $5.19 per share at December 31, 2005.

*Income taxes.* As part of the process of preparing our financial statements we are required to estimate our income taxes in each of the jurisdictions in which we operate. We account for income taxes by the liability method in accordance with the provisions of SFAS No. 109, *Accounting for Income Taxes.* Under this method, deferred income taxes are recognized for tax consequences in future years of differences between the tax bases of assets and liabilities and their financial reporting amounts at each year-end, based on enacted laws and statutory tax rates applicable to the periods in which the difference are expected to affect taxable income. Valuation allowances are provided if, based upon the weight of available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized.

We have not recorded any tax provision or benefit for the years ended December 31, 2004 and 2005. We have provided a valuation allowance for the full amount of our net deferred tax assets since realization of any future benefit from deductible temporary differences and net operating loss carry forwards cannot be sufficiently assured at December 31, 2004 and 2005. At December 31, 2004 and 2005, we had federal net operating loss carryforwards of approximately $3.9 million and approximately $8.3 million, respectively, available to reduce future taxable income, which will begin to expire in 2023. Under the provisions of the Internal Revenue Code, certain substantial changes in our ownership may result in a limitation on the amount of net operating loss carryforwards that can be used in future years.

# Business

## Overview

We are a biopharmaceutical company focused on the development and commercialization of clinical-stage drug candidates, with exclusive worldwide commercial rights to three product candidates in clinical development for various central nervous system disorders. Our lead product candidate, iloperidone, is a compound for the treatment of schizophrenia and bipolar disorder and is in a Phase III trial for schizophrenia. Our second product candidate, VEC-162, is a compound for the treatment of insomnia and depression which is currently in a Phase III trial for insomnia. VEC-162 is also ready for Phase II trials for the treatment of depression. Our third product candidate, VSF-173, is a compound for the treatment of excessive sleepiness and is ready for a Phase II trial. Each of these product candidates benefits from strong new chemical entity patent protection and may offer substantial advantages over currently approved therapies.

We expect to complete our Phase III trial for iloperidone in the first half of 2007. If this trial is successful, we will file an NDA for approval with the FDA later that year. We recently generated positive efficacy and safety data in a Phase II trial of VEC-162 for insomnia and commenced our Phase III trial for VEC-162 in insomnia in February 2006. We also expect to begin a Phase II trial of VSF-173 for excessive sleepiness in the second half of 2006. Assuming successful outcomes of our clinical trials and approval by the FDA, we expect to commercialize iloperidone and VSF-173 with our own sales force in the U.S. and expect to commercialize VEC-162 through a strategic partnership with a global pharmaceutical company, although we have not yet identified such a partner.

Our three product candidates target large prescription markets with significant unmet medical needs. Sales of schizophrenia drugs exceeded $14 billion worldwide in 2004, according to *World Review Analyst* by IMS, a leading pharmaceutical market research company. These sales were achieved despite the safety concerns, moderate efficacy and poor patient compliance that are associated with these drugs. We believe that iloperidone may address some of these shortcomings, based on its significantly reduced side effect profile observed in trials involving over 2,000 patients to date and based on further improvements to the product we plan to develop. According to IMS, in 2004 the insomnia market exceeded $3.5 billion in worldwide sales and the depression market accounted for worldwide sales in excess of $20 billion. However, the approved drugs in both the insomnia and depression markets have sub-optimal safety and efficacy profiles. We believe VEC-162 may represent a breakthrough in each of these markets, based on the product's efficacy, safety and novel mechanism of action. The excessive sleepiness market was approximately $440 million in worldwide sales in 2004. Few available drugs exist to treat this condition, and each of the available drugs has limitations. We believe that VSF-173 may represent a safe and effective alternative treatment in this growing market.

Our team is comprised of experienced pharmaceutical industry executives, and our scientific team possesses deep expertise in clinical development and in pharmacogenetics and pharmacogenomics, the scientific disciplines that examine both genetic variations among people that influence response to a particular drug and the multiple pathways through which drugs affect people. Our founder and Chief Executive Officer, Mihael H. Polymeropoulos, M.D., commenced our operations in early 2003 after establishing and leading the Pharmacogenetics Department at Novartis.

We believe that the combination of our clinical development expertise and our pharmacogenetics and pharmacogenomics expertise will enable us to shorten our drug development timeline relative to traditional approaches of drug discovery and development, and to provide additional differentiation for our product candidates. We also believe that this combination will provide us with preferential access to compounds discovered by other pharmaceutical companies. In June 2004 we acquired from Novartis the exclusive worldwide commercial rights to iloperidone and VSF-173. Our team's expertise in clinical development and in pharmacogenetics and pharmacogenomics also allowed us access to VEC-162, which had originally been developed by Bristol-Myers Squibb Company (BMS). Based on its strong pre-clinical and clinical safety data, we acquired exclusive worldwide commercial rights to VEC-162 from BMS in February 2004.

## Our strategy

Our goal is to create a leading biopharmaceutical company focused on developing and commercializing products that address critical unmet medical needs through the application of our drug development expertise and our pharmacogenetics and pharmacogenomics expertise. The key elements of our strategy to accomplish this goal are to:

- *Pursue the clinical development of our current product candidates.* We believe that our ongoing Phase III trial for iloperidone will complete the development work required to file an NDA to market and sell the drug commercially. We also believe that the Phase III trial we plan to start in early 2006 for VEC-162 will be pivotal for regulatory approval of the compound. We intend to initiate a Phase II trial for VSF-173 in the second half of 2006. We have committed, and will continue to commit, substantial resources towards completing the development of, and obtaining regulatory approvals for, our product candidates.
- *Develop a focused commercialization capability in the United States.* Because we believe that the number of physicians accounting for the majority of prescriptions in the United States for schizophrenia and excessive sleepiness is relatively small, we believe that we can cost-effectively develop our own sales force to market and sell iloperidone and VSF-173.
- *Enter into strategic partnerships to extend our commercial reach.* Given the large number of physicians treating insomnia and depression, we intend to enter into a global strategic partnership with a large pharmaceutical company to market, distribute and sell VEC-162. Additionally, we intend to seek commercial partners for iloperidone and VSF-173 outside of the United States.
- *Apply our pharmacogenetics and pharmacogenomics expertise to differentiate our products.* We believe that our pharmacogenetics and pharmacogenomics expertise will yield new insights into our product candidates. These insights may enable us to target our products to certain patient populations and to identify unexpected conditions for our product candidates to treat. We believe this expertise will enable us to differentiate and extend the lifecycle of each of our product candidates. This may also include the development of companion diagnostic tests to help physicians identify patient populations that will realize greater benefits from our compounds.
- *Expand our product portfolio through the acquisition of additional compounds.* We intend to continue to draw upon our clinical development expertise and pharmacogenetics and pharmacogenomics expertise to identify and pursue the acquisition of additional clinical-stage compounds.

## Development programs

We have the following product candidates in clinical trials:

| Product candidate | Target indications | Clinical status |
|---|---|---|
| Iloperidone (Oral) | Schizophrenia | In Phase III trial |
| | Bipolar Disorder | Ready for Phase II trial |
| Iloperidone (Depot) | Schizophrenia | Ready for Phase II trial |
| VEC-162 | Insomnia | In Phase III trial |
| | Depression | Ready for Phase II trial |
| VSF-173 | Excessive Sleepiness | Ready for Phase II trial |

### Iloperidone

We are developing iloperidone, a compound for the treatment of schizophrenia and bipolar disorder. In three short-term and three long-term trials comprising over 2,000 patients, iloperidone demonstrated reduced side effects relative to current antipsychotic drugs. We are currently conducting a Phase III trial for an oral formulation of iloperidone for schizophrenia in approximately 600 patients to confirm its efficacy, which has also been observed in previous trials. Based on our End of Phase IIb meeting with the FDA in September 2005, we believe we will be able to file an NDA for iloperidone for schizophrenia if we succeed in demonstrating its efficacy in this trial. If iloperidone obtains regulatory approval, we believe it will represent a unique new therapy for schizophrenia with distinct advantages over currently available therapies.

#### *Therapeutic opportunity*

Schizophrenia is a chronic, debilitating mental disorder characterized by hallucinations, delusions, racing thoughts and other psychotic symptoms (collectively referred to as “positive symptoms”), as well as moodiness, anhedonia (inability to feel pleasure), loss of interest, eating and sleep disturbances, and difficulty concentrating (collectively referred to as “negative symptoms”). Schizophrenia develops in late adolescence or early adulthood in approximately 1% of the world’s population. Genetic and environmental factors are believed to be responsible for the disease. Most schizophrenia patients today are treated with drugs known as “atypical” antipsychotics, which were first approved in the U.S. in the late 1980s and have been named “atypical” for their ability to treat a broader range of negative symptoms than the first-generation “typical” antipsychotics, which were introduced in the 1950s and are now generic. Atypical antipsychotics are generally regarded as having improved side effect profiles and efficacy relative to typical antipsychotics and currently comprise 90% of schizophrenia prescriptions. According to IMS, the global market for atypical antipsychotics exceeded $13 billion in 2004. Currently approved atypical antipsychotics include olanzapine (Zyprexa®, Eli Lilly and Company), risperidone (Risperdal®, Johnson & Johnson), quetiapine (Seroquel®, AstraZeneca), aripiprazole (Abilify®, BMS), ziprasidone (Geodon®, Pfizer), and generic clozapine.

#### *Limitations of current treatments*

The treatment of schizophrenia remains challenging because currently approved antipsychotics, even “atypical” antipsychotics, often induce serious side effects and offer only modest and

occasional efficacy. Side effects include weight gain, diabetes, extrapyramidal symptoms (involuntary bodily movements), hyperprolactinemia (an elevated secretion of the hormone prolactin which can lead to sexual dysfunction and breast development and milk secretion in women and men), increased somnolence (sleepiness) and cognition difficulties. The side effect profile and modest efficacy of currently available antipsychotics result in poor patient compliance to their prescribed drug regimen. Consequently, there remains a high degree of dissatisfaction with atypical antipsychotics among physicians and patients. Research by LEK Consulting LLC, a leading consulting firm, supports this, showing that physicians employ a "trial-and-error" approach of prescribing a series of different atypical antipsychotics as they attempt to balance side effects and symptom management in each patient. In addition, the recent CATIE (Clinical Antipsychotic Trials of Interventional Effectiveness) study, conducted by the National Institute of Mental Health and reported in *The New England Journal of Medicine,* found that 74% of patients taking antipsychotics discontinued treatment within 18 months. The average time to discontinuation for these patients in the CATIE study was approximately 6 months.

***Potential advantages of iloperidone***

In addition to the efficacy observed in clinical trials to date, our experience with iloperidone thus far suggests that the compound may provide benefits to patients beyond those provided by currently available drugs:

- *Safety.* Short- and long-term safety trials have shown that patients who used iloperidone had reduced side effects relative to currently available antipsychotics, including low weight gain, no induction of diabetes, low extrapyramidal symptoms, including no akathisia (inability to sit still), no hyperprolactinemia, low incidence of sleepiness and low negative effects on cognition relative to placebo. Like many other atypical antipsychotics, iloperidone is associated with a prolongation of the heart's QTc interval, but in no instance did any patient taking iloperidone in a clinical trial have an interval exceeding a 500-millisecond threshold that the FDA has identified as being of particular concern. We believe that the safety profile of iloperidone may result in improved patient compliance with their treatment regimen.
- *Extended-release injectable formulation.* We are developing an extended-release injectable formulation for iloperidone, which only needs to be administered once every four weeks and which we believe will be a compelling complement to our oral formulation for both physicians and patients. Novartis conducted a two-month Phase I/ IIa safety trial of this formulation in schizophrenia patients, in which it demonstrated the benefit of consistent release over a four-week time period with no greater side effects relative to oral dosing. Further development of this formulation will be an immediate priority for us following the completion of the ongoing Phase III trial of the oral formulation. The commercial potential for our extended-release injectable formulation has been demonstrated by the success of the injectable formulation for risperidone, Risperdal® Consta®, which achieved worldwide sales of $310 million in 2004, its first full year on the market. We believe that our four-week formulation for iloperidone will be an attractive alternative to Risperdal Consta, which is injected once every two weeks.

Additionally, we plan to continue to apply our pharmacogenetics and pharmacogenomics expertise to develop tools that may allow physicians to avoid the "trial-and-error" approach to prescribing antipsychotic medications for their patients:

- *Pharmacogenetic evaluation of iloperidone's efficacy.* Based on our retrospective analysis of prior clinical data, we have determined that certain patients may be more likely to respond to iloperidone and to enjoy better treatment results relative to the general schizophrenia

patient population. These patients have a common mutation of a gene linked to central nervous system function, that is estimated to occur in approximately 70% of schizophrenia patients. We have developed a genetic test which we are using in our current Phase III trial to confirm this correlation. According to market research conducted by LEK Consulting, physicians treating schizophrenia patients would enthusiastically welcome a genetic test that would enable them to identify likely responders to iloperidone, given the unpredictable efficacy and serious side effects currently associated with atypical antipsychotics, and be more likely to prescribe iloperidone as a result.

- *Pharmacogenetic evaluation of iloperidone's safety.* We have also discovered that patients with an uncommon mutation of a well understood gene affecting drug metabolism experience higher levels of iloperidone in their blood and may experience longer QTc intervals while taking iloperidone. We estimate that this genetic attribute is found in approximately 5-10% of schizophrenia patients. We believe that certain physicians may choose to test patients for this mutation if they have a concern about QTc interval prolongation with respect to a particular patient.

We intend to make one simple blood test for both markers available through national reference laboratories.

***Overview of prior Phase III clinical trials***

Novartis conducted three short-term (six-week) Phase III trials with iloperidone. In each of these trials, one or more dose levels of iloperidone achieved statistically significant superiority to placebo on the standard scales for measuring efficacy in schizophrenia, either the Positive and Negative Symptom Scale or Brief Psychiatric Rating Scale. Each of these scales is a subjective test administered by a clinician measuring a patient across a range of potential schizophrenia symptoms. In only one of the three Phase III trials was the declared target dose demonstrated to have statistically significant efficacy better than placebo, which is required for the results of a trial to support an efficacy claim with the FDA. With the need to conduct at least one more Phase III trial to be able to file for approval, Novartis elected instead to discontinue the development of iloperidone.

The table below summarizes the efficacy results from the previous short-term Phase III trials:

| Trial number | Number of patients | Doses(1) | Positive and negative symptom scale improvement(2) | Significance vs. placebo(3) |
|---|---|---|---|---|
| ILP 3000 | 621 | placebo | -4.6 | n/a |
| | | 4 mg/day | -9.0 | Not significant |
| | | ***8 mg/day(4)*** | ***-7.8*** | ***Not significant*** |
| | | ***12 mg/day(4)*** | ***-9.9*** | ***p < 0.05*** |
| ILP 3004 | 616 | placebo | -3.5 | n/a |
| | | 4-8 mg/day | -9.4 | p< 0.02 |
| | | ***10-16 mg/day*** | ***-11.1*** | ***p< 0.001*** |
| ILP 3005 | 710 | placebo | -7.6 | n/a |
| | | ***12-16 mg/day*** | ***-11.0*** | ***Not significant*** |
| | | 20-24 mg/day | -14.0 | p< 0.01 |

(1) Declared dose (the dose for which a drug must show statistically significant improvement vs. placebo) is italicized and bolded.

(2) As patients improve, their Positive and Negative Symptom Scale score decreases. Baseline scores for enrollees in the trials were 94.5 (ILP 3000), 94.3 (ILP 3004) and 94.7 (ILP 3005).

(3) This is represented by p value, which measures likelihood that a difference between drug and placebo is due to random chance. A $p < 0.05$ means the chance that the difference is due to random chance is less than 5%, and is a commonly accepted threshold for denoting a meaningful difference between drug and placebo.

(4) Declared dose in this trial was a composite of 8 and 12 mg/day.

We have made several observations about these previous Phase III trials that suggest both reasons for their failure and ways in which we may improve the chances of success in our ongoing Phase III trial.

- *Patients who took the drug at our target dose improved significantly.* At the dose for which we intend to seek approval (24 mg/day), iloperidone achieved statistically significant efficacy in the ILP 3005 trial. This gives us confidence that we can replicate that success in our ongoing Phase III trial.
- *Low doses partially explain the mixed efficacy results of the ILP 3000 trial.* We believe that this trial failed principally because the doses of iloperidone administered were too low. This is supported by the efficacy of iloperidone that was observed at higher doses in the other trials.
- *Patient drop-outs explain the mixed efficacy results of the ILP 3005 trial.* An exceptionally high number of patients dropped out of this study early and before they had the chance of achieving therapeutic blood levels of the drug. While high drop-out rates are common in studies of schizophrenia drugs, two issues may have exacerbated the drop-out problem in this trial: first, the trial was primarily on an outpatient basis, which is unusual for clinical trials of antipsychotic therapies, and second, the patients in the trial had to take the drug in a four-pill, twice-daily regimen. Both factors had a negative effect on patient compliance and led to a very high drop-out rate. We retrospectively analyzed the data from the Novartis trials and determined that, overall, the drop-outs were not due to other problems with iloperidone, and we have further demonstrated that iloperidone achieved statistically significant efficacy among those patients who remained enrolled long enough to achieve therapeutic blood levels of the drug.
- *The FDA has agreed that we may analyze the data generated from the trials in a way that more appropriately addresses early drop-outs.* Under a standard “last observation carried forward” statistical model used by Novartis to analyze the prior trial data, experts in the field of clinical trial statistical analysis have noted that results may be significantly biased in certain circumstances by the presence of early patient drop-outs. To correct for this, these experts recommend models such as a “mixed-method repeated measures” statistical model to analyze data from clinical trials with early patient drop-outs. While the FDA has not previously approved a drug on the basis of efficacy measured with a “mixed-method repeated measures” model, we discussed our intent to use it with the FDA in an August 2005 guidance meeting, and they have agreed that the “last observation carried forward” method may be biased under these circumstances and that a “mixed-method repeated measures” model approach may be more appropriate for our ongoing Phase III trial. We retrospectively analyzed Novartis’ Phase III data using a “mixed-method repeated measures” model and determined that iloperidone demonstrated statistically significant efficacy at Novartis’ declared dose in two of three previous trials (trials ILP 3004 and ILP 3005), versus just one trial under a “last observation carried forward” model (trial ILP 3004).

Though not required for registration, Novartis also conducted three long-term (52-week) Phase III trials of iloperidone. In these trials, which involved more than 1,300 patients, Novartis

measured the safety and time to discontinuation of iloperidone at doses ranging from 4 mg/day to 16 mg/day compared to the antipsychotic haloperidol. Iloperidone demonstrated strong safety results and was statistically non-inferior to the efficacy of haloperidol in time to discontinuation of therapy.

***Overview of our ongoing Phase III trial***

In November 2005, we initiated our Phase III trial to evaluate iloperidone for the treatment of patients with schizophrenia. The trial is a randomized, double-blind, placebo- and active-controlled Phase III trial of approximately 600 patients with schizophrenia. To have a successful clinical trial, we need to demonstrate that iloperidone has statistically significant efficacy better than placebo. The active control is present to validate the design of the trial and to increase the chances that trial participants will receive some form of treatment while participating in the trial. Patients will receive four weeks of inpatient treatment in the trial. The iloperidone formulation being used in the study is an oral, twice-daily dose of 12 mg, or 24 mg per day. The trial is being conducted in the United States and India by Quintiles Transnational, a contract research organization. Patient dosing began in November 2005 and will continue through early 2007.

We believe that if this trial is successful, our data and documentation on iloperidone will be adequate to support both United States and European regulatory filings of oral iloperidone. We conducted an End of Phase IIb meeting with the FDA in September 2005, during which the agency agreed that this trial's design is adequate to measure short-term efficacy in schizophrenia. The FDA also agreed that with success in this trial, the iloperidone package would be sufficient for filing an NDA.

***Potential indication for bipolar disorder***

In addition to schizophrenia, we believe iloperidone may be effective in treating bipolar disorder. Most of the approved atypical antipsychotics have received approval for bipolar disorder subsequent to commercializing for the treatment of schizophrenia. Approximately 20% of atypical antipsychotic prescriptions are for the treatment of bipolar disorder, according to LEK Consulting. Iloperidone is ready for an initial Phase II trial in bipolar disorder.

***Commercialization***

We expect to build our own sales force to market iloperidone directly to psychiatrists and other target physicians in the U.S. Because the U.S. psychiatric community is relatively small, we believe that we can cost-effectively develop our own sales force to market and sell iloperidone. Outside of the United States, we expect to find commercial partners for iloperidone.

***Intellectual property***

Iloperidone and its metabolites, formulations, and uses are covered by a total of nine patent and patent application families worldwide. The primary new chemical entity patent covering iloperidone expires normally in 2011 in the United States and 2010 in most of the major markets in Europe. In the United States, the Hatch-Waxman Act of 1984 provides for an extension of new chemical entity patents for a period of up to five years following the expiration of the patent covering that compound to compensate for time spent in development. We believe that iloperidone will qualify for the full five-year patent term extension. In Europe, similar legislative enactments provide for five-year extensions of new

chemical entity patents through the granting of Supplementary Protection Certificates, and we believe that iloperidone will qualify for this extension as well. Consequently, assuming that we are granted all available extensions by the FDA and European regulatory authorities and that we receive regulatory approval, we expect that our rights to commercialize iloperidone will be exclusive until 2016 in the United States and until 2015 in Europe. Additionally, the patent application covering the depot formulation of iloperidone, if it is granted, will expire normally in 2022. Several other patent applications covering uses, formulations and derivatives relating to iloperidone extend beyond 2020. Pursuant to a recent European Union directive, we may also acquire the exclusive right in most European Union countries to market iloperidone for a period of 10 years from the date of its regulatory approval in Europe (with the possibility for a further one-year extension), even though the European patents covering iloperidone will likely expire prior to the end of such 10-year period. No generic versions of iloperidone would be permitted to be marketed or sold during this 10-year period in most European countries. See “Patents and Intellectual Property” below for a more complete description of our intellectual property rights.

We acquired worldwide, exclusive rights to the new chemical entity patent covering iloperidone and certain related intellectual property from Novartis under a sublicense agreement we entered into in 2004. Please see “—License agreements” below for a more complete description of the rights we acquired from Novartis with respect to iloperidone.

**VEC-162**

VEC-162 is an oral compound entering Phase III trials for the treatment of insomnia. The compound selectively binds the melatonin receptors, which are thought to govern the body’s natural sleep/wake cycle. Compounds that selectively bind to these receptors selectively are thought to be able to help treat sleep disorders, and additionally are believed to offer potential benefits in depression. We commenced a Phase III trial of VEC-162 for insomnia in February 2006. VEC-162 is also ready to commence a Phase II trial for the treatment of depression.

***Therapeutic opportunity***

Industry sources estimate that of the 73 million U.S. adults who suffer from some form of insomnia, only approximately 11 million currently receive treatment. Sleep disorders are segmented into three major categories: primary insomnia, secondary insomnia and circadian rhythm sleep disorders. Insomnia is a symptom complex that comprises difficulty falling asleep or staying asleep, or non-refreshing sleep, in combination with daytime dysfunction or distress. The symptom complex can be an independent disorder (primary insomnia) or be a result of another condition such as depression or anxiety (secondary insomnia). Circadian rhythm sleep disorders result from a misalignment of the sleep/wake cycle and an individual’s daily activities or lifestyle. The circadian rhythm is the rhythmic output of the human biological clock and is governed by melatonin levels in the bloodstream. Both the timing of behavioral events (activity, sleep, and social interactions) and the environmental light-dark cycle result in a sleep/wake cycle that follows the circadian rhythm. Examples of circadian rhythm sleep disorders include transient disorders such as jet lag and chronic disorders such as shift work sleep disorder. Market research we have conducted with LEK Consulting indicates that circadian rhythm sleep disorders represent a significant portion of the market for sleep disorders. In 2004, the sleep disorder drug market exceeded $3.5 billion in global sales, according to IMS.

There are a number of drugs approved and prescribed for patients with sleep disorders. The most commonly prescribed drugs are hypnotics, such as zolpidem (Ambien®, Sanofi-Aventis), eszopiclone (Lunesta®, Sepracor) and zaleplon (Sonata®, King Pharmaceuticals) These drugs work by acting upon a set of brain receptors known as GABA receptors. Several drugs in development, including indiplon (Pfizer/Neurocrine Biosciences) and gaboxadol (Merck/Lundbeck), also utilize a similar mechanism of action. Members of the benzodiazapine class of sedatives are also approved for insomnia, but their usage has declined due to an inferior side effect profile compared to hypnotics. Anecdotal evidence also suggests that sedative antidepressants, such as trazodone and doxepin, are prescribed off-label for insomnia. Recently, the FDA approved ramelteon (Rozerem™, Takeda), a compound with a mechanism of action similar to VEC-162, for the treatment of insomnia.

***Limitations of current treatments***

We believe that each of the drugs used to treat insomnia has inherent limitations that leave patients underserved. The key limitations include the potential for abuse, significant side effects, and a failure to address the underlying causes of sleeplessness:

- Many of the products prescribed commonly for sleep disorders, including Ambien, Lunesta, and Sonata, are classified as Schedule IV controlled substances by the DEA due to their potential for abuse, tolerance and withdrawal symptoms. Drugs that are classified as Schedule IV controlled substances are subject to restrictions, and in some cases prohibitions, on providing samples to physicians and on prescription refills under state laws. For example, many states require a doctor visit as a condition for receiving any refill of a prescription for a Schedule IV controlled substance.
- Many drugs approved for and used in sleep disorders also induce a number of nuisance side effects beyond the more serious abuse and addiction effects associated with most approved products. These side effects include next-day grogginess, memory loss, unpleasant taste, dry mouth and hormonal changes.
- We believe that none of the drugs used and approved for sleep, other than Rozerem, work through the body's natural sleep/wake cycle, which is governed by melatonin. We believe that, for patients whose sleep disruption is due to a misalignment of this sleep/wake cycle and the patients' need to sleep (as is the case in circadian rhythm sleep disorders), a drug that naturally modulates the sleep/wake cycle would be an attractive new alternative because it would be addressing the underlying cause of the sleeplessness, rather than merely addressing its symptoms.

***Potential advantages of VEC-162***

We believe that VEC-162 may offer efficacy similar to the most efficacious of the approved sleep drugs, and that it may provide significant benefits to patients beyond those offered by the approved drugs. We believe that VEC-162 is unlikely to be scheduled as a controlled substance by the DEA, because Rozerem, which has a similar mechanism of action to VEC-162, was shown not to have potential for abuse and was not classified as a Schedule IV controlled substance by the DEA. However, despite the fact that the drugs have a similar mechanism of action, our Phase II results demonstrate that VEC-162 has superior sleep maintenance to Rozerem. VEC-162 also appears to be safe, with no significant side effects or effects on next-day performance. For patients with circadian rhythm sleep disorders, VEC-162 may be able to

align the patient's sleep/wake cycle with their lifestyle, something we believe no approved sleep therapy has demonstrated.

***Overview of Phase II clinical results***

We recently completed a randomized, double-blind, multi-center, placebo-controlled Phase II trial evaluating the effect of VEC-162 on healthy volunteers in a "transient insomnia" setting. This setting involved putting trial participants to bed five hours ahead of their regular sleep time.

A total of 39 healthy volunteers were randomly assigned to one of four VEC-162 dosing groups (10, 20, 50, and 100 milligrams) or placebo, 37 of these volunteers completed the study. Patients took one oral dose 30 minutes before bedtime. The results of this trial demonstrated:

- *Circadian rhythm shift.* There was a statistically significant ($p < 0.025$) shift in circadian rhythm at 100 mg of up to five hours on the first night, and a statistically significant dose-response curve. This finding confirmed that the drug acts through the sleep/wake cycle, and shows further that the drug can modulate this cycle to address the underlying cause of sleeplessness in patients with circadian rhythm sleep disorders.
- *Reduced duration of wake after sleep onset.* "Wake after sleep onset" is defined as the number of minutes awake from the time the participant falls asleep to the end of the evaluation period. There was a statistically significant ($p < 0.05$) reduction in wake after sleep onset at 100 mg of 68.5 minutes, and a reduction in the duration of wake after sleep onset versus placebo of at least 36 minutes was observed at all doses. The effects were 36 minutes (10 mg) and 45 minutes (20 and 50 mg).
- *Improved sleep efficiency.* Sleep efficiency is defined as time asleep divided by time in bed. VEC-162 achieved statistically significant improvements in sleep efficiency vs. placebo at 50 mg ($p < 0.05$) and 100 mg ($p < 0.02$). Absolute improvement occurred at all doses with at least 12.5% greater sleep efficiency vs. placebo. Specific improvements were 12.5% (10 mg), 13.5% (20 mg), 15.4% (50 mg) and 18.1% (100 mg).
- *Improved time to achieve persistent sleep.* All patients experienced a reduction in time it took to achieve persistent sleep (otherwise known as latency). The 10 mg dose improved 23.4 minutes vs. placebo ($p < 0.004$), the 20 mg improved 10.1 minutes (not significant), the 50 mg improved 18.8 minutes ($p < 0.02$), and the 100 mg dose improved 19.3 minutes ($p < 0.03$).
- *A placebo-like side effect profile.* VEC-162 also demonstrated a strong safety profile, with no statistically significant side effects versus placebo and no impairment of next-day performance or mood.

***Overview of Phase III clinical trial***

We commenced our Phase III trial in February 2006 to evaluate the safety and efficacy of VEC-162 for the treatment of insomnia. The trial is a randomized, double-blind, placebo-controlled trial in which we expect to enroll approximately 400 healthy volunteers. The trial will measure sleep efficiency and time to fall asleep, as well as next-day performance and mood. Participants will receive one to two days of inpatient treatment. We believe that we will need to conduct additional trials beyond this Phase III trial to receive approval for the treatment of primary insomnia. We plan to confirm our path to filing with the FDA in an End of Phase IIb meeting after this upcoming clinical trial.

***Potential indication for depression***

We believe that VEC-162 may also be effective in treating depression. Agomelatine, another drug that acts on the brain's melatonin receptors, has shown efficacy and safety that compared favorably to an approved antidepressant, Paxil® (paroxetine, GSK), in a Phase III trial. While the precise mechanism for the effect of drugs like VEC-162, agomelatine and Rozerem, which act on the brain's melatonin receptors, is currently unknown, it is possible that by improving sleep, these drugs could improve mood because depressed patients are likely to have sleep disorders.

Approximately 29 million adults in the United States suffer from some form of depression, over 11 million of whom are currently treated with a prescription antidepressant medication. Sales of antidepressants exceeded $20 billion globally in 2004.

We believe that VEC-162 will be differentiated from approved antidepressants in several ways. In the Phase III trial of agomelatine described above, agomelatine showed significantly improved mood in two weeks, vs. four weeks for Paxil®. Consequently, VEC-162 may, with its similar properties to agomelatine, enjoy a more rapid onset of action than approved antidepressants. We believe that VEC-162 should also have an improved side effect profile when compared to approved products because it should not have the sexual side effects, weight gain, and sleep disruption associated with these products.

VEC-162 is ready for Phase II trials in depression. It has demonstrated an antidepressant effect in animal models and has completed several Phase I trials, including one with four weeks of exposure, showing none of the serious side effects associated with the approved antidepressants.

***Commercialization***

Given the size of the prescribing physician base for insomnia and depression, we plan to partner with a global pharmaceutical company for the development and commercialization of VEC-162 worldwide, although we have not yet identified such a partner.

***Intellectual property***

VEC-162 and its formulations and uses are covered by a total of five patent and patent application families worldwide. The primary new chemical entity patent covering VEC-162 expires normally in 2017 in the United States and in most European markets. We believe that, like iloperidone, VEC-162 will meet the various criteria of the Hatch-Waxman Act and will receive five additional years of patent protection for VEC-162 in the United States, which would extend its patent protection in the United States until 2022. In Europe, similar legislative enactments provide for five-year extensions of European new chemical entity patents through the granting of Supplementary Protection Certificates, and we believe that VEC-162 will qualify for such an extension, which would extend European patent protection for VEC-162 until 2022. Several other patent applications covering uses of VEC-162 will, if granted, provide exclusive rights for these uses until 2026.

Our rights to the new chemical entity patent covering VEC-162 and related intellectual property have been acquired through a license with BMS. Please see "—License agreements" below for a discussion of this license.

**VSF-173**

VSF-173 is an oral compound that has demonstrated effects on animal sleep/wake patterns and gene expression patterns suggestive of a stimulant effect. The compound also demonstrated a stimulant effect in humans during clinical trials conducted by Novartis for Alzheimer's Disease. As a result of these observations, we are currently planning to begin the clinical evaluation of VSF-173 in excessive sleepiness. We intend to initiate a Phase II trial for VSF-173 in late 2006. We believe the market opportunity for VSF-173 is significant. Provigil® (modafinil, Cephalon) alone accounted for sales of approximately $440 million in 2004.

## Pharmacogenetics and pharmacogenomics expertise

Our expertise in pharmacogenetics and pharmacogenomics enables us to acquire high quality, patent-protected clinical compounds that have been discovered and developed by other pharmaceutical firms. We can capitalize on the discovery and early development efforts of other firms by acquiring compounds with clinical safety and possibly efficacy data that we believe can benefit from our extensive pharmacogenetics and pharmacogenomics expertise.

Pharmacogenetics and pharmacogenomics start from the premise that a given drug will not just affect the target/receptor for which it was initially developed, but will in fact interact with many systems within the body. Proof of this comes from two different sources. We know, for instance, that most drugs have side effects. These typically result from a drug's interaction not just with its intended receptor in its intended organ system, but also with either that receptor outside the intended organ system or with other receptors entirely. There are many examples of drugs that were developed initially for one indication but were then shown to be effective for another. One example of this is Viagra® (sildenafil, Pfizer), which was developed initially for hypertension (high blood pressure) but proved more effective for erectile dysfunction. Being compound-focused enables us to forego the costly discovery work and start with compounds already known to be drugs, in that they are safe and interact with at least one biological system.

Starting with safe compounds— ones that have completed at least Phase I safety trials— we use our pharmacogenetics and pharmacogenomics expertise to understand the disease or diseases for which the drug has the optimal biological (and clinical) effect. We have used this expertise to identify potential points of differentiation for iloperidone and VSF-173. Beyond these two, we have already identified a number of unexpected signaling pathways attributable to known compounds using these techniques, and we have filed a number of patent applications based on these findings. For each compound, we may choose to confirm our findings in animal studies. Compounds clearing this hurdle will be ready for Phase II trials.

Compounds that we would most likely consider attractive candidates for applying our expertise would meet the following criteria:

- were initially developed by a well-established biopharmaceutical company
- have already completed Phase I trials
- are free of significant formulation issues
- have potential for strong patent protection through composition of matter patents, new doses or new formulations

## License agreements

Our rights to develop and commercialize our clinical-stage product candidates are subject to the terms and conditions of licenses granted to us by other pharmaceutical companies.

**Iloperidone**

We acquired exclusive worldwide rights to patents for iloperidone through a sublicense agreement with Novartis. A predecessor company of Sanofi-Aventis, Hoechst Marion Roussel, Inc. (HMRI), discovered iloperidone and completed early clinical work on the compound. In 1996, following a review of its product portfolio, HMRI licensed its rights to the iloperidone patents to Titan Pharmaceuticals, Inc. on an exclusive basis. In 1997, soon after it had acquired its rights, Titan sublicensed its rights to iloperidone on an exclusive basis to Novartis. In June 2004, we acquired exclusive worldwide rights to these patents to develop and commercialize iloperidone through a sublicense agreement with Novartis. In partial consideration for this sublicense, we paid Novartis an initial license fee of $500,000 and are obligated to make future milestone payments to Novartis of less than $100 million in the aggregate (the majority of which are tied to sales milestones), as well as royalty payments to Novartis at a rate which, as a percentage of net sales, is in the mid-twenties. Our rights with respect to the patents to develop and commercialize iloperidone may terminate, in whole or in part, if we fail to meet certain development or commercialization milestones relating to the time it takes for us to launch iloperidone commercially following regulatory approval, and the time it takes for us to receive regulatory approval following our submission of an NDA or equivalent foreign filing. Additionally our rights may terminate in whole or in part if we do not meet certain other obligations under our sublicense agreement to make royalty and milestone payments, if we fail to comply with requirements in our sublicense agreement regarding our financial condition, or if we do not abide by certain restrictions in our sublicense agreement regarding our other development activities. Additionally, if we do not cure any breaches by Novartis or Titan of their respective obligations under their agreements with Titan and Sanofi-Aventis, respectively, our rights to develop and commercialize iloperidone may revert back to Novartis.

**VEC-162**

In February 2004, we entered into a license agreement with BMS under which we received an exclusive worldwide license under certain patents and patent applications, and other licenses to intellectual property, to develop and commercialize VEC-162. In partial consideration for the license, we paid BMS an initial license fee of $500,000 and are obligated to make future milestone payments to BMS of less than $40 million in the aggregate (the majority of which are tied to sales milestones) as well as royalty payments based on the net sales of VEC-162 at a rate which, as a percentage of net sales, is in the low teens. We are also obligated under this agreement to pay BMS a percentage of any sublicense fees, upfront payments and milestone and other payments (excluding royalties) that we receive from a third party in connection with any sublicensing arrangement, at a rate which is in the mid-twenties. We have agreed with BMS in our license agreement for VEC-162 to use our commercially reasonable efforts to develop and commercialize VEC-162 and to meet certain milestones in initiating and completing certain clinical work.

BMS holds certain rights with respect to VEC-162 in our license agreement. For example, BMS has a right of first negotiation to enter into a commercialization and development agreement with us prior to the completion of our Phase III program. Additionally, if we have not agreed to one or more partnering arrangements to develop and commercialize VEC-162 in certain

significant markets with one or more third parties after the completion of our Phase III program, BMS has the option to exclusively develop and commercialize VEC-162 on its own on pre-determined financial terms, including milestone and royalty payments. If we seek a co-promotion agreement for VEC-162, BMS has a right of first negotiation to enter into such an agreement with us.

Either party may terminate the VEC-162 license agreement under certain circumstances, including a material breach of the agreement by the other. In the event that BMS has not exercised its option to reacquire the rights to VEC-162 and we terminate our license, or if BMS terminates our license due to our breach, all rights licensed and developed by us under this agreement will revert or otherwise be licensed back to BMS on an exclusive basis.

#### VSF-173

In June 2004, we entered into a license agreement with Novartis under which we received an exclusive worldwide license to develop and commercialize VSF-173. In consideration for the license, we paid Novartis an initial license fee of $500,000. We are also obligated to make future milestone payments to Novartis of less than $50 million in the aggregate (the majority of which are tied to sales milestones) and royalty payments at rates which, as a percentage of net sales, range from the low-to-mid teens. Novartis has the right to co-develop and exclusively commercialize VSF-173 on its own after Phase II and Phase III in exchange for certain milestones and royalty payments. In the event that Novartis chooses not to exercise either of these options and we decide to enter into a partnering arrangement to commercialize VSF-173, Novartis has a right of first refusal to negotiate such an agreement with us, as well as a right to submit a last matching counteroffer regarding such an agreement. In addition, our rights with respect to VSF-173 may terminate, in whole or in part, if we fail to meet certain development and commercialization milestones described in our license agreement relating to the time it takes us to complete our development work on VSF-173. These rights may also terminate in whole or in part if we fail to make royalty or milestone payments or if we do not comply with requirements in our license agreement regarding our financial condition. In the event of an early termination of our license agreement, all rights licensed and developed by us under this agreement may revert back to Novartis.

## Government regulation

Government authorities in the United States, at the federal, state and local level, as well as foreign countries and local foreign governments, regulate the research, development, testing, manufacture, labeling, promotion, advertising, distribution, sampling, marketing, import and export of our product candidates. All of our products will require regulatory approval by government agencies prior to commercialization. In particular, human pharmaceutical products are subject to rigorous pre-clinical and clinical trials and other approval procedures of the FDA and similar regulatory authorities in foreign countries. The process of obtaining these approvals and the subsequent compliance with appropriate domestic and foreign laws, rules and regulations require the expenditure of significant time and human and financial resources.

#### United States government regulation

In the United States, the FDA regulates drugs under the Federal Food, Drug and Cosmetic Act and implementing regulations. If we fail to comply with the applicable requirements at any time during the product development process, approval process, or after approval, we may become subject to administrative or judicial sanctions. These sanctions could include the FDA's

refusal to approve pending applications, withdrawals of approvals, clinical holds, warning letters, product recalls, product seizures, total or partial suspension of our operations, injunctions, fines, civil penalties or criminal prosecution. Any such sanction could have a material adverse effect on our business.

The steps required before a drug may be marketed in the United States include:

- pre-clinical laboratory tests, animal studies and formulation studies under cGLP
- submission to the FDA of an investigational new drug application, or IND, which must become effective before human clinical trials may begin
- execution of adequate and well-controlled clinical trials to establish the safety and efficacy of the product for each indication for which approval is sought
- submission to the FDA of an NDA
- satisfactory completion of an FDA inspection of the manufacturing facility or facilities at which the product is produced to assess compliance with cGMP
- FDA review and approval of the NDA

Pre-clinical studies generally are conducted in laboratory animals to evaluate the potential safety and activity of a product. Violation of the FDA's good laboratory practices regulations can, in some cases, lead to invalidation of the studies, requiring these studies to be replicated. In the United States, drug developers submit the results of pre-clinical trials, together with manufacturing information and analytical and stability data, to the FDA as part of the IND, which must become effective before clinical trials can begin in the United States. An IND becomes effective 30 days after receipt by the FDA unless before that time the FDA raises concerns or questions about issues such as the proposed clinical trials outlined in the IND. In that case, the IND sponsor and the FDA must resolve any outstanding FDA concerns or questions before clinical trials can proceed. If these concerns or questions are unresolved, the FDA may not allow the clinical trials to commence.

Pilot studies generally are conducted in a limited patient population, approximately three to 25 subjects, to determine whether the product candidate warrants further clinical trials based on preliminary indications of efficacy. These pilot studies may be performed in the United States after an IND has become effective or outside of the United States prior to the filing of an IND in the United States in accordance with government regulations and institutional procedures.

Clinical trials involve the administration of the investigational product candidate to human subjects under the supervision of qualified investigators. Clinical trials are conducted under protocols detailing, among other things, the objectives of the study, the parameters to be used in assessing the safety and the effectiveness of the drug. Each protocol must be submitted to the FDA as part of the IND prior to beginning the trial.

Typically, clinical evaluation involves a time-consuming and costly three-Phase sequential process, but the phases may overlap. Each trial must be reviewed, approved and conducted under the auspices of an independent Institutional Review Board, and each trial must include the patient's informed consent.

- Phase I: refers typically to closely-monitored clinical trials and includes the initial introduction of an investigational new drug into human patients or health volunteer subjects. Phase I trials are designed to determine the safety, metabolism and pharmacologic actions of a drug in humans, the potential side effects associated with increasing drug doses and, if possible, to gain early evidence of the product candidate's effectiveness. Phase I trials also include the

study of structure-activity relationships and mechanism of action in humans, as well as studies in which investigational drugs are used as research tools to explore biological phenomena or disease processes. During Phase I trials, sufficient information about a drug's pharmacokinetics and pharmacological effects should be obtained to permit the design of well-controlled, scientifically valid Phase II studies. The total number of subjects and patients included in Phase I trials varies, but is generally in the range of 20 to 80 people.

- Phase II: refers to controlled clinical trials conducted to evaluate appropriate dosage and the effectiveness of a drug for a particular indication or indications in patients with a disease or condition under study and to determine the common short-term side effects and risks associated with the drug. These trials are typically well controlled, closely monitored and conducted in a relatively small number of patients, usually involving no more than several hundred subjects.
- Phase III: refers to expanded controlled and uncontrolled clinical trials. These trials are performed after preliminary evidence suggesting effectiveness of a drug has been obtained. Phase III trials are intended to gather additional information about the effectiveness and safety that is needed to evaluate the overall benefit-risk relationship of the drug and to provide an adequate basis for physician labeling. Phase III trials usually include from several hundred to several thousand subjects.

Phase I, II and III testing may not be completed successfully within any specified time period, if at all. The FDA closely monitors the progress of each of the three phases of clinical trials that are conducted in the United States and may, at its discretion, reevaluate, alter, suspend or terminate the testing based upon the data accumulated to that point and the FDA's assessment of the risk/benefit ratio to the patient. A clinical program is designed after assessing the causes of the disease, the mechanism of action of the active pharmaceutical ingredient of the product candidate and all clinical and pre-clinical data of previous trials performed. Typically, the trial design protocols and efficacy endpoints are established in consultation with the FDA. Upon request through a special protocol assessment, the FDA can also provide specific guidance on the acceptability of protocol design for clinical trials. The FDA or we may suspend or terminate clinical trials at any time for various reasons, including a finding that the subjects or patients are being exposed to an unacceptable health risk. The FDA can also request additional clinical trials be conducted as a condition to product approval. During all clinical trials, physicians monitor the patients to determine effectiveness and to observe and report any reactions or other safety risks that may result from use of the drug candidate. As noted above, iloperidone is currently in Phase III trials for the treatment of schizophrenia, VEC-162 is ready for Phase III trials for the treatment of insomnia and VSF-173 is ready for Phase II trials for the treatment of sleepiness.

Assuming successful completion of the required clinical trials, drug developers submit the results of pre-clinical studies and clinical trials, together with other detailed information including information on the manufacture and composition of the product, to the FDA, in the form of an NDA, requesting approval to market the product for one or more indications. In most cases, the NDA must be accompanied by a substantial user fee. The FDA reviews an NDA to determine, among other things, whether a product is safe and effective for its intended use.

Before approving an application, the FDA will inspect the facility or facilities where the product is manufactured. The FDA will not approve the application unless cGMP compliance is satisfactory. The FDA will issue an approval letter if it determines that the application, manufacturing process and manufacturing facilities are acceptable. If the FDA determines that the application, manufacturing process or manufacturing facilities are not acceptable, it will

outline the deficiencies in the submission and will often request additional testing or information. Notwithstanding the submission of any requested additional information, the FDA may ultimately decide that the application does not satisfy the regulatory criteria for approval and refuse to approve the application by issuing a not approvable letter.

The testing and approval process requires substantial time, effort and financial resources, and each may take several years to complete. The FDA may not grant approval on a timely basis, or at all. We may encounter difficulties or unanticipated costs in our efforts to secure necessary governmental approvals, which could delay or preclude us from marketing our products. Furthermore, the FDA may prevent a drug developer from marketing a product under a label for its desired indications or place other conditions on distribution as a condition of any approvals, which may impair commercialization of the product. After approval, some types of changes to the approved product, such as adding new indications, manufacturing changes and additional labeling claims, are subject to further FDA review and approval. Similar regulatory procedures must also be complied with in countries outside the United States.

If the FDA approves the new drug application, the drug becomes available for physicians to prescribe in the United States. After approval, the drug developer must comply with a number of post-approval requirements, including delivering periodic reports to the FDA, submitting descriptions of any adverse reactions reported, and complying with drug sampling and distribution requirements. The holder of an approved NDA is required to provide updated safety and efficacy information and to comply with requirements concerning advertising and promotional labeling. Also, quality control and manufacturing procedures must continue to conform to cGMP after approval. Drug manufacturers and their subcontractors are required to register their facilities and are subject to periodic unannounced inspections by the FDA to assess compliance with cGMP which imposes certain procedural and documentation requirements relating to quality assurance and quality control. Accordingly, manufacturers must continue to expend time, money and effort in the area of production and quality control to maintain compliance with cGMP and other aspects of regulatory compliance. The FDA may require post market testing and surveillance to monitor the product's safety or efficacy, including additional studies, known as Phase IV trials, to evaluate long-term effects.

In addition to studies requested by the FDA after approval, a drug developer may conduct other trials and studies to explore use of the approved compound for treatment of new indications, which require FDA approval. The purpose of these trials and studies is to broaden the application and use of the drug and its acceptance in the medical community.

We use, and will continue to use, third-party manufacturers to produce our products in clinical and commercial quantities. Future FDA inspections may identify compliance issues at our facilities or at the facilities of our contract manufacturers that may disrupt production or distribution, or require substantial resources to correct. In addition, discovery of problems with a product or the failure to comply with requirements may result in restrictions on a product, manufacturer or holder of an approved NDA, including withdrawal or recall of the product from the market or other voluntary or FDA-initiated action that could delay further marketing. Newly discovered or developed safety or effectiveness data may require changes to a product's approved labeling, including the addition of new warnings and contraindications. Also, new government requirements may be established that could delay or prevent regulatory approval of our products under development.

**Foreign regulation**

Whether or not we obtain FDA approval for a product, we must obtain approval of a product by the comparable regulatory authorities of foreign countries before we can commence clinical trials or marketing of the product in those countries. The approval process varies from country to country, and the time may be longer or shorter than that required for FDA approval. The requirements governing the conduct of clinical trials, product licensing, pricing and reimbursement also vary greatly from country to country. Although governed by the applicable country, clinical trials conducted outside of the United States typically are administered with the three-Phase sequential process that is discussed above under "—United States government regulation." However, the foreign equivalent of an IND is not a prerequisite to performing pilot studies or Phase I clinical trials.

Under European Union regulatory systems, we may submit marketing authorization applications either under a centralized or decentralized procedure. The centralized procedure which is available for products produced by biotechnology or which are highly innovative, provides for the grant of a single marketing authorization that is valid for all European Union member states. This authorization is a marketing authorization approval. The decentralized procedure provides for mutual recognition of national approval decisions. Under this procedure, the holder of a national marketing authorization may submit an application to the remaining member states. Within 90 days of receiving the applications and assessment report, each member state must decide whether to recognize approval. This procedure is referred to as the mutual recognition procedure.

In addition, regulatory approval of prices is required in most countries other than the United States. We face the risk that the resulting prices would be insufficient to generate an acceptable return to us or our collaborators.

## Third-party reimbursement and pricing controls

In the United States and elsewhere, sales of pharmaceutical products depend in significant part on the availability of reimbursement to the consumer from third-party payors, such as government and private insurance plans. Third-party payors are increasingly challenging the prices charged for medical products and services. It will be time consuming and expensive for us to go through the process of seeking reimbursement from Medicare and private payors. Our products may not be considered cost effective, and coverage and reimbursement may not be available or sufficient to allow us to sell our products on a competitive and profitable basis. The passage of the Medicare Prescription Drug and Modernization Act of 2003 imposes new requirements for the distribution and pricing of prescription drugs which may affect the marketing of our products.

In many foreign markets, including the countries in the European Union, pricing of pharmaceutical products is subject to governmental control. In the United States, there have been, and we expect that there will continue to be, a number of federal and state proposals to implement similar governmental pricing control. While we cannot predict whether such legislative or regulatory proposals will be adopted, the adoption of such proposals could have a material adverse effect on our business, financial condition and profitability.

## Marketing and sales

We currently have no sales, marketing or distribution capabilities. However, we plan to develop these capabilities internally to the extent that it is practical to do so, and enter into partnering

arrangements to the extent that we believe large sales and marketing forces will be necessary. More specifically, in the United States, we expect to build our own sales force to market iloperidone and VSF-173 directly to psychiatrists and other target physicians. Because we believe that the number of physicians that would generate the majority of prescriptions for iloperidone and VSF-173 is relatively small, we believe that we can cost-effectively develop our own sales force to market and sell iloperidone and VSF-173. Outside of the U.S., we intend to find commercial partners for iloperidone and VSF-173. We will seek a global commercial partner for VEC-162.

## Patents and proprietary rights; Hatch-Waxman protection

We will be able to protect our products from unauthorized use by third parties only to the extent that our products are covered by valid and enforceable patents — either licensed in from third parties or generated internally— that give us sufficient proprietary rights. Accordingly, patents and other proprietary rights are essential elements of our business.

Our three current compounds in clinical development are covered by new chemical entity and other patents. These new chemical entity patents cover the active portions of our compounds and provide patent protection for all other compounds and formulations containing these active portions. The new chemical entity patent for iloperidone is owned by Sanofi-Aventis, and other patents and patent applications relating to iloperidone are owned by Sanofi-Aventis and Novartis. Novartis also owns the new chemical entity patent for VSF-173 and Bristol-Myers Squibb owns the new chemical entity patent for VEC-162. For all three compounds we have obtained exclusive worldwide rights to develop and commercialize the compounds covered by these patents through license and sublicense arrangements. For more on these license and sublicense arrangements, please see “—License agreements” above. In addition, we have generated intellectual property, and filed patent applications covering this intellectual property, for each of the three compounds.

The new chemical entity patent covering iloperidone expires normally in 2011 in the United States and in 2010 in most European markets. The new chemical entity patent covering VEC-162 expires in 2017 in the United States and most European markets. The new chemical entity patent covering VSF-173 expires in 2014 in the United States and in 2012 in most European markets. Additionally, for each of our late-stage compounds, an additional period of exclusivity in the United States of up to five years following the expiration of the patent covering that compound may be obtained pursuant to the United States Drug Price Competition and Patent Term Restoration Act of 1984, more commonly known as the “Hatch-Waxman Act.” Assuming we gain such a five-year extension and that we continue to have our intellectual property rights under our sublicense and license agreements, we would have exclusive new chemical entity patent rights in the U.S. for iloperidone until 2016, for VEC-162 until 2022 and for VSF-173 until 2017. In Europe, similar legislative enactments may allow us to obtain five-year extensions of the European new chemical entity patents covering our product candidates through the granting of Supplementary Protection Certificates, which would allow us to have exclusive European new chemical entity patent rights for iloperidone until 2015, for VEC-162 until 2022 and for VSF-173 until 2017. Additionally, a recent directive in the European Union allows companies who receive European regulatory approval for a new compound to have a 10-year period of market exclusivity in most European countries for that compound (with the possibility of a further one-year extension), beginning on the date of such European regulatory approval, regardless of when the European new chemical entity patent covering such compound expires. No generic version of an approved drug may be marketed or sold in most European countries during this 10-year period. This directive may be of particular

importance with respect to iloperidone, since the European new chemical entity patent for iloperidone will likely expire prior to the end of this 10-year period of market exclusivity.

Aside from the new chemical entity patents covering our current late-stage compounds, as of December 31, 2005 we had one issued United States patent and 12 pending patent applications in the United States, two of which have already been filed internationally as Patent Cooperation Treaty applications. The claims in these various patents and patent applications are directed to compositions of matter, including claims covering other product candidates, pharmaceutical compositions, and methods of use.

For proprietary know-how that is not appropriate for patent protection, processes for which patents are difficult to enforce and any other elements of our discovery process that involve proprietary know-how and technology that is not covered by patent applications, we rely on trade secret protection and confidentiality agreements to protect our interests. We require all of our employees, consultants and advisors to enter into confidentiality agreements. Where it is necessary to share our proprietary information or data with outside parties, our policy is to make available only that information and data required to accomplish the desired purpose and only pursuant to a duty of confidentiality on the part of those parties.

## Manufacturing

We currently depend and expect to continue to depend on a small number of third-party manufacturers to produce sufficient quantities of our product candidates for use in our clinical studies. We are not obligated to obtain our product candidates from any particular third-party manufacturer and we believe that we would be able to obtain our product candidates from a number of third-party manufacturers at comparable cost.

If any of our product candidates are approved for commercial use, we plan to rely on third-party contract manufacturers to produce sufficient quantities for large-scale commercialization. If we do enter into commercial manufacturing arrangements with third parties, these third-party manufacturers will be subject to extensive governmental regulation. Specifically, regulatory authorities in the markets which we intend to serve will require that drugs be manufactured, packaged and labeled in conformity with cGMP or equivalent foreign standards. We intend to engage only those contract manufacturers who have the capability to manufacture drug products in compliance with cGMP and other applicable standards in bulk quantities for commercial use.

## Competition

The pharmaceutical industry and the central nervous system segment of that industry in particular, is highly competitive and includes a number of established large and mid-sized companies with greater financial, technical and personnel resources than we have and significantly greater commercial infrastructures than we have. Our market segment also includes several smaller emerging companies whose activities are directly focused on our target markets and areas of expertise. If approved, our product candidates will compete with numerous therapeutic treatments offered by these competitors. While we believe that our product candidates will have certain favorable features, existing and new treatments may also possess advantages. Additionally, the development of other drug technologies and methods of disease prevention are occurring at a rapid pace. These developments may render our product candidates or technologies obsolete or noncompetitive.

We believe the primary competitors for each of our product candidates are as follows:

- For iloperidone in the treatment of schizophrenia, the atypical antipsychotics Risperdal® (risperidone) by Johnson & Johnson (including the depot formulation Risperdal® Consta®), Zyprexa® (olanzapine) by Eli Lilly, Seroquel® (quetiapine) by AstraZeneca, Abilify® (aripiprazole) by BMS/Otsuka, and Geodon® (ziprasidone) by Pfizer, and generic clozapine, as well as the typical antipsychotics haloperidol, chlorpromazine, thioridazine and sulpiride (all of which are generic). In addition to the approved products, compounds in Phase III trials for the treatment of schizophrenia include bifeprunox (Wyeth/ Solvay/ Lundbeck), paliperidone (Johnson & Johnson), and asenapine (Pfizer).
- For VEC-162 in the treatment of insomnia, Rozerem™ (ramelteon) by Takeda, hypnotics such as Ambien® (zolpidem) by Sanofi-Aventis (including Ambien CR®), Lunesta® (eszopiclone) by Sepracor and Sonata® (zaleplon) by King Pharmaceuticals, generic benzodiazepines such as trazodone and doxepin, and over-the-counter remedies such as Benadryl® and Tylenol PM®. In addition to the approved products, compounds in Phase III trials for insomnia include indiplon (Pfizer/ Neurocrine Biosciences) gaboxadol (Merck/ Lundbeck), and low-dose doxepin (Silenor™, Somaxon).
- For VEC-162 in the treatment of depression, agomelatine (Les Laboratoires Servier), antidepressant drugs such as Paxil® (paroxetine) by GSK, Zoloft® (sertraline) by Pfizer, Prozac® (fluoxetine) by Eli Lilly, and Lexapro (escitalopram) by Lundbeck/ Forest Pharmaceuticals Inc., Effexor® (venlafaxine) by Wyeth as well as other compounds such as Wellbutrin® (buproprion) by GSK and Cymbalta® (duloxetine) by Eli Lilly.
- For VSF-173 in the treatment of excessive sleepiness, Provigil® (modafinil) by Cephalon and Xyrem® (sodium oxybate) by Jazz Pharmaceuticals, Inc.

Our ability to compete successfully will depend in part on our ability to utilize our pharmacogenetics and pharmacogenomics and drug development expertise to identify, develop, secure rights to and obtain regulatory approvals for promising pharmaceutical compounds before others are able to develop competitive products. Our ability to compete successfully will also depend on our ability to attract and retain skilled and experienced personnel. Additionally, our ability to compete may be affected because insurers and other third-party payors in some cases seek to encourage the use of cheaper, generic products, which could make our products less attractive.

## Employees

As of December 31, 2005 we had 31 full-time employees, 25 of whom were primarily engaged in research and development activities. 26 of our full-time employees work at our facility in Rockville, Maryland, and 4 of our full-time employees work at our Singapore research facility. None of our employees are represented by a labor union. We have not experienced any work stoppages and consider our employee relations to be good.

## Facilities

Our current headquarters are located in Rockville, Maryland, consisting of approximately 17,000 square feet of office and laboratory space. Our annual rent under our lease for this facility is approximately $433,000, with an annual increase of 3% per year, until the expiration of the lease in 2016.

In January, 2006, we vacated our previous headquarters in Rockville, Maryland, and intend to exercise our sublease rights under the lease governing this facility. Pending such a sublease, we remain obligated to make rent payments under this lease. Our annual rent under this lease for 2006 is approximately $233,000, with an annual increase of 3% per year. The lease expires in 2008.

We have also entered into a lease for a research facility in Singapore. Our annual rent for this facility for 2006 is approximately $76,000; the lease for the facility expires in December 2006.

# Management

## Executive officers and directors

The following are our executive officers and directors as of December 31, 2005.

| Name | Age | Position |
|---|---|---|
| Mihael H. Polymeropoulos, M.D. | 45 | President and Chief Executive Officer, Director |
| William D. “Chip” Clark | 37 | Senior Vice President, Chief Business Officer and Secretary |
| Steven A. Shallcross | 44 | Senior Vice President, Chief Financial Officer and Treasurer |
| Thomas Copmann, Ph.D. | 53 | Vice President of Regulatory Affairs |
| Deepak Phadke, Ph.D. | 55 | Vice President of Manufacturing |
| Argeris N. Karabelas, Ph.D.(1),(3) | 53 | Director and Chairman of the Board |
| Richard W. Dugan(2) | 63 | Director |
| Brian K. Halak, Ph.D.(2),(3) | 34 | Director |
| Wayne T. Hockmeyer, Ph.D.(1),(3) | 61 | Director |
| David Ramsay(2) | 42 | Director |
| James B. Tananbaum, M.D.(1) | 42 | Director |

(1) Member of Compensation Committee.

(2) Member of Audit Committee.

(3) Member of Nominating/ Corporate Governance Committee.

*Mihael H. Polymeropoulos,* M.D. has served as Chief Executive Officer and a Director of Vanda since May of 2003. Prior to joining Vanda, Dr. Polymeropoulos was Vice President and Head of the Pharmacogenetics Department at Novartis from 1998 to 2003. Prior to his tenure at Novartis, he served as Chief of the Gene Mapping Section, Laboratory of Genetic Disease Research, National Human Genome Research Institute, from 1992 to 1998. Dr. Polymeropoulos is the co-founder of the Integrated Molecular Analysis of Genome Expression (IMAGE) Consortium. Dr. Polymeropoulos holds a degree in Medicine from the University of Patras.

*William D. “Chip” Clark* has served as Senior Vice President and Chief Business Officer of Vanda since September of 2004 and served as a Director of Vanda from 2002 to 2004. Prior to joining Vanda, Mr. Clark was a Principal at Care Capital, LLC, a venture capital firm investing in biopharmaceuticals companies, from 2000 to 2004. Prior to his tenure at Care Capital, he served in a variety of commercial roles at SmithKline Beecham (now part of GlaxoSmithKline), from 1990 to 2000. Mr. Clark holds a B.A. from Harvard University and an M.B.A. from The Wharton School at the University of Pennsylvania.

*Steven A. Shallcross* has served as Senior Vice President, Chief Financial Officer and Treasurer of Vanda since November of 2005. From October 2001 to November 2005, Mr. Shallcross was the Senior Vice President, Chief Financial Officer and Treasurer at Advancis Pharmaceutical Corporation, a specialty pharmaceutical company. Mr. Shallcross was the Vice President of Finance and Chief Financial Officer at Bering Truck Corporation, a truck manufacturer, from 1997 to 2001. From 1993 to 1997, Mr. Shallcross served as Vice President of Operations at Precision Scientific, Inc., a manufacturer of scientific laboratory equipment. He was the

Controller of Precision Scientific from 1993 to 1994. Mr. Shallcross has over 20 years of senior financial and operations experience in emerging organizations, including acquisitions and restructurings. Mr. Shallcross received a bachelor's degree in accounting from the University of Illinois and an M.B.A. from the University of Chicago, Graduate School of Business. Mr. Shallcross is also a certified public accountant.

*Thomas Copmann,* Ph.D. has served as Vice President of Regulatory Affairs at Vanda since April of 2005. Prior to joining Vanda, Dr. Copmann served as Senior Director of Regulatory Affairs at Eli Lilly, from 2000 to 2005. Prior to his tenure at Eli Lilly, Dr. Copmann was the Associate Vice President for Regulatory Affairs and Executive Director for the Commission on Drugs for Rare Diseases at the Pharmaceutical Manufacturers Association, from 1989 to 1995. Dr. Copmann holds an M.S. in Endocrinology and a Ph.D. in Physiology from Kent State University.

*Deepak Phadke,* Ph.D. has served as Vice President of Manufacturing at Vanda since August of 2005. Prior to joining Vanda, Dr. Phadke served as Executive Director of Pharmaceutical Sciences at Beckloff Associates, a pharmaceutical research and development consulting company located in the Kansas City area, from 1998 to 2005. Prior to his tenure at Beckloff Associates, Dr. Phadke served as a manager and research scientist in the formulation development departments at Hoechst Marion Roussel and its predecessor companies in Kansas City and Indianapolis, from 1986 to 1998. Dr. Phadke holds a B.S. and an M.S. in Pharmacy and Pharmaceutics, respectively, from Nagpur University in India, and a Ph.D. in Pharmaceutics from Rutgers University.

*Argeris N. "Jerry" Karabelas,* Ph.D. has served as a Director and Chairman of the Board since 2003. Dr. Karabelas has served as a Partner of Care Capital, LLC since 2001. Prior to his tenure at Care Capital, Dr. Karabelas was the Founder and Chairman of the Novartis BioVenture fund, from July 2000 to December 2001. From 1998 to 2000, he served as Head of Healthcare and CEO of Worldwide Pharmaceuticals for Novartis. Prior to joining Novartis, Dr. Karabelas was Executive Vice President of SmithKline Beecham responsible for U.S. operations, European operations, Regulatory, and Strategic Marketing, from 1981 to 1998. He is a member of the Scientific Advisory Council of the Massachusetts General Hospital, the Harvard- MIT Health Science and Technology Visiting Committee, a Director of SykePharma Plc, Human Genome Sciences, NitroMed Inc., Anadys Pharmaceuticals, Inc., Acura Pharmaceuticals, Inc. and a Trustee of Fox Chase Cancer Center and the Philadelphia University of the Sciences. Dr. Karabelas holds a Ph.D. in Pharmacokinetics from the Massachusetts College of Pharmacy.

*Richard W. Dugan* has served as a Director of Vanda since December of 2005. From 1976 to September 2002, Mr. Dugan served as a Partner with Ernst & Young, LLP, where he served in a variety of managing and senior partner positions, including Mid-Atlantic Area Senior Partner from 2001 to 2002, Mid-Atlantic Area Managing Partner from 1989 to 2001 and Pittsburgh Office Managing Partner from 1979 to 1989. Mr. Dugan retired from Ernst & Young LLP in September 2002. Mr. Dugan currently serves on the board of directors of two other publicly-traded pharmaceutical companies, Advancis Pharmaceutical Corporation and Critical Therapeutics, Inc. Mr. Dugan holds a B.S.B.A. from Pennsylvania State University.

*Brian K. Halak,* Ph.D. has served as a Director of Vanda since 2004. Dr. Halak has served as a Principal at Domain Associates, a venture capital firm based in Princeton, New Jersey, since 2001 and will be a Partner as of January 2006. Prior to joining Domain, he served as an Associate of the venture capital firm Advanced Technology Ventures, from 2000 to 2001. Dr. Halak serves on the Investment Advisory Council for Ben Franklin Technology Partners and

BioAdvance, both seed stage investment groups in Philadelphia. Dr. Halak holds a B.S.E. from the University of Pennsylvania and a Ph.D. in Immunology from Thomas Jefferson University.

*Wayne T. Hockmeyer,* Ph.D. has served as a Director of Vanda since 2004. Dr. Hockmeyer founded MedImmune, Inc. in April 1988 as President and Chief Executive Officer and was elected to serve on the Board of Directors in May 1988. Dr. Hockmeyer became Chairman of the Board of Directors of MedImmune, Inc. in May 1993. He relinquished his position as Chief Executive Officer in October 2000 and now serves as Chairman of the Board of MedImmune, Inc. and President of MedImmune Ventures, Inc. Dr. Hockmeyer earned his bachelor's degree from Purdue University and his Ph.D. from the University of Florida. Dr. Hockmeyer was recognized in 1998 by the University of Florida as a Distinguished Alumnus and in 2002, Dr. Hockmeyer was awarded a Doctor of Science honoris causa from Purdue University. Dr. Hockmeyer is a member of the Maryland Economic Development Commission and the Governor's Workforce Investment Board (GWIB). He is also a member of the Maryland Governor's Scientific Advisory Board. He is a member of the Board of Directors of the publicly-traded biotechnology companies, Advancis Pharmaceutical Corp., GenVec, Inc. and Idenix Pharmaceuticals, Inc. and serves on the boards of several educational and philanthropic organizations.

*David Ramsay* has served as a Director of Vanda since 2004. Mr. Ramsay has served as a Partner of Care Capital, LLC, which he co-founded in 2000. Prior to founding Care Capital, Mr. Ramsay served as a Managing Director of the Rhône Group, LLC, from 1997 to 2000 and co-founded Rhône Capital, LLC, a private equity investment vehicle. Mr. Ramsay previously worked at Morgan Stanley Capital Partners. Mr. Ramsay holds an A.B. in Mathematics from Princeton University and an M.B.A. from the Stanford University Graduate School of Business.

*James B. Tananbaum,* M.D. has served as a Director of Vanda since 2004. Dr. Tananbaum has served as a Managing Partner of Prospect Venture Partners, a dedicated life science venture fund group which he co-founded, since 2000. Prior to co-founding Prospect Venture Partners, he served as Chief Executive Officer of Theravance, Inc. from 1997 to 2000. Dr. Tananbaum also served as a Partner at Sierra Ventures, from 1993 to 1997. Dr. Tananbaum co-founded GelTex Pharmaceuticals, Inc. in 1991. He is an officer of the Young Presidents' Organization, Golden Gate Chapter and a member of the World Economic Forum and the Harvard-MIT Health Science and Technology Visiting Committee. Dr. Tananbaum serves as a Director of Critical Therapeutics, Inc. Dr. Tananbaum holds a bachelor's degree and a B.S.E.E. from Yale University and an M.D. and an M.B.A. from Harvard University.

## Election of officers

Our officers are elected by our board of directors on an annual basis and serve until their successors are duly elected and qualified. There are no family relationships among any of our officers or directors.

## Classified board

Our restated certificate of incorporation that will become effective as of the closing of this offering provides for a classified board of directors consisting of three classes of directors, each serving a staggered three-year term. As a result, a portion of our board of directors will be elected each year from and after the closing. To implement the classified structure, upon the consummation of the offering, three of the nominees to the board will be elected to one-year terms, two will be elected to two-year terms and two will be elected to three-year terms.

Thereafter, directors will be elected for three-year terms. Drs. Hockmeyer and Tananbaum and Mr. Ramsay have been designated Class I directors whose term will expire at the 2007 annual meeting of stockholders, assuming the completion of the proposed offering. Dr. Halak and Mr. Dugan have been designated Class II directors whose term will expire at the 2008 annual meeting of stockholders, assuming the completion of the proposed offering. Drs. Polymeropoulos and Karabelas have been designated Class III directors whose term expires at the 2009 annual meeting of stockholders, assuming the completion of the proposed offering. Our bylaws provide that the number of authorized directors may be changed only by resolution of the board of directors. Any additional directorships resulting from an increase in the number of authorized directors will be distributed among the three classes so that, as nearly as reasonably possible, each class will consist of one-third of the directors. The classification of the board of directors may have the effect of delaying or preventing changes in control of our company.

## Committees of the board of directors

Our board currently has three committees: the audit committee, the compensation committee and the nominating/corporate governance committee. The information set forth below assumes the completion of the proposed offering.

*Audit Committee.* The members of our audit committee are Messrs. Dugan, and Ramsay and Dr. Halak. Mr. Dugan chairs the audit committee. Mr. Dugan is our audit committee financial expert (as is currently defined under the SEC rules implementing Section 407 of the Sarbanes-Oxley Act of 2002). Our audit committee, among other duties:

- appoints a firm to serve as independent accountant to audit our financial statements
- discusses the scope and results of the audit with the independent accountant, and reviews with management and the independent accountant our interim and year-end operating results
- considers the adequacy of our internal accounting controls and audit procedures
- approves (or, as permitted, pre-approves) all audit and non-audit services to be performed by the independent accountant

The audit committee has the sole and direct responsibility for appointing, evaluating and retaining our independent auditors and for overseeing their work. All audit services and all non-audit services, other than de minimis non-audit services, to be provided to us by our independent auditors must be approved in advance by our audit committee. We believe that the composition of our audit committee meets the requirements for independence under the current Nasdaq National Market and SEC rules and regulations.

*Compensation Committee.* The members of our compensation committee are Drs. Hockmeyer, Karabelas and Tananbaum. The purpose of our compensation committee is to discharge the responsibilities of our board of directors relating to compensation of our executive officers. Specific responsibilities of our compensation committee include:

- reviewing and recommending approval of compensation of our executive officers
- administering our equity compensation plans
- reviewing and making recommendations to our board with respect to incentive compensation and equity plans

During the fiscal year ended December 31, 2005, Mihael H. Polymeropoulos, M.D., our Chief Executive Officer, served as a member of the Compensation Committee. He was replaced as a member of the Compensation Committee on December 19, 2005.

*Nominating/ Corporate Governance Committee.* The members of our nominating/corporate governance committee are Drs. Halak, Hockmeyer and Karabelas. Our nominating/corporate governance committee identifies, evaluates and recommends nominees to our board of directors and committees of our board of directors, conducts searches for appropriate directors, and evaluates the performance of our board of directors and of individual directors. The nominating/corporate governance committee is also responsible for reviewing developments in corporate governance practices, evaluating the adequacy of our corporate governance practices and reporting and making recommendations to the board concerning corporate governance matters.

## Director compensation

On December 19, 2005, our board of directors adopted a compensation program for outside directors. Pursuant to this program, each member of our board of directors who is not our employee will receive a $25,000 annual retainer as well as $2,500 for each board meeting attended in person ($1,250 for meetings attended by telephone conference). The chairman of the board of directors will receive an additional annual retainer of $10,000, and the chairman of each committee of the board of directors will receive an additional annual retainer of $2,000. Each director will receive $1,000 for each meeting of any committee of the board of directors attended in person or by telephone conference.

Under the director compensation program adopted on December 19, 2005, each member of our board of directors who is not our employee and who is elected after December 19, 2005 will initially receive a nonstatutory option to purchase 35,000 shares of our common stock upon election, and each member of our board of directors who is not our employee will also receive annual grants of options to purchase 15,000 shares of our common stock. The stock option granted upon election will vest and become exercisable in equal monthly installments over a period of four years from the date of the grant, except that in the event of a change of control the option will accelerate and become immediately exercisable. Each annual stock option will vest and become exercisable in equal monthly installments over a period of one year from the date of grant, except that in the event of a change of control the option will accelerate and become immediately exercisable. All of these options will have an exercise price equal to the fair market value of our common stock on the date of the grant. In cases where a director is serving as such on behalf of an entity, we may issue a warrant directly to such entity as consideration for the services provided in lieu of granting an option to the director himself.

## Compensation committee interlocks and insider participation

The current members of our compensation committee of our board of directors are Drs. Hockmeyer, Karabelas and Tananbaum. No interlocking relationship exists between our board of directors or compensation committee and the board of directors or compensation committee of any other company, nor has any interlocking relationship existed in the past.

## Executive compensation

The following table sets forth the compensation earned by our Chief Executive Officer and the other highest paid executive officers whose salary and bonus exceeded $100,000 for services rendered in all capacities to us during the fiscal years ended December 31, 2005 and 2004. We use the term “named executive officers” to refer to these people later in this prospectus. No other executive officers who would have otherwise been includable in the following table on the basis of salary and bonus earned for the fiscal years ended December 31, 2005 and 2004 have been excluded by reason of their termination of employment or change in executive status during those years.

| Name and principal position | Year | Salary($) | Bonus($)(7) | Long-term compensation awards: Securities underlying options | All other compensation |
|---|---|---|---|---|---|
| Mihael H. Polymeropoulos, M.D. | 2005 | $ 360,719 | $ 181,100 | 2,424,070 | $ 7,000(5) |
| President and Chief Executive Officer | 2004 | $ 350,000 | $ 140,000 | — | $ 4,667(5) |
| William D. “Chip” Clark | 2005 | $ 227,297 | $ 62,600 | 972,374 | $ 2,100(5) |
| Senior Vice President, Chief Business Officer and Secretary | 2004 | $ 75,000(1) | $ 18,750 | 303,400 | $ 3,564(6) |
| Steven A. Shallcross | 2005 | $ 32,921(2) | $ 62,500 | 500,000 | $ — |
| Senior Vice President, Chief Financial Officer and Treasurer | 2004 | $ — | $ — | — | $ — |
| Thomas Copmann, Ph.D. | 2005 | $ 147,218(3) | $ 42,000 | 117,000 | $ 4,000(5) |
| Vice President of Regulatory Affairs | 2004 | $ — | $ — | — | $ — |
| Deepak Phadke, Ph.D. | 2005 | $ 79,892(4) | $ 10,500 | 93,359 | $ — |
| Vice President of Manufacturing | 2004 | $ — | $ — | — | $ — |

(1) In September 2004 Mr. Clark joined us as Senior Vice President, Chief Business Officer and Secretary at annual salary of $225,000. Other compensation represents relocation expenses.

(2) In October 2005 Mr. Shallcross joined us as Senior Vice President, Chief Financial Officer and Treasurer at annual salary of $250,000.

(3) In May 2005 Mr. Copmann joined us as Vice President of Regulatory Affairs at annual salary of $200,000.

(4) In August 2005 Mr. Phadke joined us as Vice President of Manufacturing at annual salary of $170,000.

(5) Represents matching contribution under our 401(k) plan.

(6) Represents relocation expenses.

(7) Represents bonuses earned in the respective year which are payable in the subsequent year.

## Option grants in last fiscal year

The following table outlines information regarding stock options granted to our named officers in 2005. Amounts in the following table under potential realizable values are amounts that could be achieved for the respective options if they are exercised at the end of the option term. For purposes of this analysis, the Securities and Exchange Commission mandates the use of 5% and 10% assumed annual rates of compounded stock price appreciation, and these rates do not represent an estimate or projection of our future common stock prices. The amounts under potential realizable value represent assumed rates of appreciation in the value of our common stock from the assumed initial public offering price of $ per share. Actual gains, if any, in this value will depend on the future performance of our common stock and overall market conditions. We may not achieve the amounts reflected in the following table.

| | Individual grants | | | | Potential realizable value at assumed annual rates of stock price appreciation for option term(3) | |
|---|---|---|---|---|---|---|
| Name | Number of securities underlying options granted | Percent of total options granted to employees in fiscal year(1) | Exercise price(2) | Expiration date | 5% | 10% |
| Mihael H. Polymeropoulos, M.D. | 425,000 | 9.7% | $ 0.10 | 2/10/2016 | | |
| | 1,368,981 | 31.4% | $ 0.10 | 9/28/2016 | | |
| | 630,089 | 14.4% | $ 1.43 | 12/29/2016 | | |
| | 2,424,070 | 55.5% | | | | |
| William D. “Chip” Clark | 160,000 | 3.7% | $ 0.10 | 2/10/2016 | | |
| | 680,291 | 15.6% | $ 0.10 | 9/28/2016 | | |
| | 132,083 | 3.0% | $ 1.43 | 12/29/2016 | | |
| | 972,374 | 22.3% | | | | |
| Steven A. Shallcross | 275,000 | 6.3% | $ 0.25 | 11/14/2016 | | |
| | 225,000 | 5.2% | $ 1.43 | 12/29/2016 | | |
| | 500,000 | 11.5% | | | | |
| Thomas Copmann, Ph.D. | 75,000 | 1.7% | $ 0.10 | 4/5/2016 | | |
| | 42,000 | 1.0% | $ 1.43 | 12/29/2016 | | |
| | 117,000 | 2.7% | | | | |
| Deepak Phadke, Ph.D. | 50,000 | 1.1% | $ 0.10 | 8/15/2016 | | |
| | 43,359 | 1.0% | $ 1.43 | 12/29/2016 | | |
| | 93,359 | 2.1% | | | | |

(1) The figures representing percentages of total options granted to employees in the last fiscal year are based on a total of 4,364,874 option shares granted to our employees during fiscal year 2005.

(2) The exercise price of each option granted was equal to the fair market value of our common stock as valued by our board of directors on the date of grant. The exercise price may be paid in cash, cash equivalents, or in shares of our common stock.

(3) The potential realizable value is calculated based on the ten-year term of the option at the time of grant. Stock price appreciation of 5% and 10% is assumed according to rules promulgated by the Securities and Exchange Commission and does not represent our prediction of our stock price performance. The potential realizable value at 5% and 10% appreciation is calculated by:

- Multiplying the number of shares of stock subject to a given stock option by the exercise price per share
- Assuming that the aggregate stock value derived from that calculation compounds at the annual 5% or 10% rate shown in the table until the expiration of the option
- Subtracting from that result the aggregate option exercise price

## Option exercises and fiscal year-end option values

During 2005, Thomas Copmann exercised options for 75,000 shares of restricted stock, which continue to be subject to vesting restrictions. The following table presents the number and value of securities underlying unexercised options that were held by our named executive officers as of December 31, 2005.

| | Number of securities underlying unexercised options at December 31, 2005 | | Value of unexercised in-the-money options at December 31, 2005(1) | |
|---|---|---|---|---|
| **Name** | **Exercisable** | **Unexercisable** | **Exercisable** | **Unexercisable** |
| Mihael H. Polymeropoulos, M.D. | 318,651 | 2,598,819 | | |
| William D. “Chip” Clark | 94,810 | 1,180,964 | | |
| Steven A. Shallcross | — | 500,000 | | |
| Thomas Copmann, Ph.D. | — | 42,000 | | |
| Deepak Phadke, Ph.D. | — | 93,359 | | |

(1) Amounts presented under the caption “Value of unexercised in-the-money options at December 31, 2005” are based on the fair market value of $ per share minus the exercise price, multiplied by the number of shares subject to the stock option, without taking into account any taxes that might be payable in connection with the transaction.

## Employment agreements

We have entered into offer letters or employment agreements with each of Mihael H. Polymeropoulos, M.D., our Chief Executive Officer, William D. “Chip” Clark, our Chief Business Officer, Steven A. Shallcross, our Chief Financial Officer, Thomas Copmann, our Vice President of Regulatory Affairs, and Deepak Phadke, our Vice President of Manufacturing.

*Mihael Polymeropoulos, M.D.* We entered into an employment agreement in February 2005 with Dr. Polymeropoulos, our President and Chief Executive Officer, which provides for an annual base salary of $362,250 and the possibility of an annual target bonus amount equal to 40% of his annual base salary upon achievement of certain performance goals. If Dr. Polymeropoulos’ employment is terminated without cause, he becomes permanently disabled, or he terminates his employment for good reason, he will receive the following severance benefits following his employment termination: (a) a cash payment of his monthly base salary for 12 months; (b) payment of his monthly COBRA health insurance premiums; and (c) a bonus in an amount determined as follows: (i) if he is terminated prior to the first anniversary of this agreement, a pro-rata portion of the anticipated first-year target bonus will be given to him; (ii) if he is terminated on or following the first anniversary and prior to the third, the bonus will equal the greater of the most recent target bonus or the average target bonuses awarded for the prior years; or (iii) if he is terminated on or following the third anniversary, the bonus will be equal to the greater of the most recent target bonus or the average target bonus awarded for the prior three years. In addition, the employment agreement provides for an option grant covering 918,400 shares of our common stock with the following vesting acceleration terms: if, following a change in control, Dr. Polymeropoulos is terminated without cause, or he terminates his employment for good reason, he will become vested in 100% of his then unvested shares.

*William D. “Chip” Clark.* We entered into an employment agreement in February 2005 with Mr. Clark, our Senior Vice President, Chief Business Officer and Secretary, which provides for an annual base salary of $227,625 and the possibility of a annual target bonus equal to 25% of his

annual base salary upon achievement of certain performance criteria. If Mr. Clark's employment is terminated without cause, he becomes permanently disabled, or he terminates his employment for good reason, he will receive the following severance benefits following his employment termination: (a) a cash payment of his monthly base salary for 12 months; (b) payment of his monthly COBRA health insurance premiums; and (c) a bonus in an amount determined as follows: (i) if he is terminated prior to the first anniversary of this agreement, a pro-rata portion of the anticipated first-year target bonus will be given to him; (ii) if he is terminated on or following the first anniversary and prior to the third, the bonus will equal the greater of the most recent target bonus or the average target bonuses awarded for the prior years; or (iii) if he is terminated on or following the third anniversary, the bonus will be equal to the greater of the most recent target bonus or the average target bonus awarded for the prior three years. In addition, the employment agreement provides for an option grant covering 463,400 shares of our common stock with the following vesting acceleration terms: if, following a change in control, Mr. Clark is terminated without cause, or he terminates his employment for good reason, he will become vested in 24 months' worth of his then unvested shares.

*Steven A. Shallcross.* We entered into an employment agreement in October 2005 with Mr. Shallcross, our Senior Vice President, Chief Financial Officer and Treasurer, which provides for an annual base salary of $250,000 and the possibility of an annual target bonus equal to 25% of his annual base salary upon achievement of certain performance criteria. If Mr. Shallcross' employment is terminated without cause, he becomes permanently disabled, or he terminates his employment for good reason, he will receive the following severance benefits following his employment termination: (a) a cash payment of his monthly base salary for 12 months; (b) payment of his monthly COBRA health insurance premiums; and (c) a bonus in an amount determined as follows: (i) if he is terminated prior to the first anniversary of this agreement, a pro-rata portion of the anticipated first-year target bonus will be given to him; (ii) if he is terminated on or following the first anniversary and prior to the third, the bonus will equal the greater of the most recent target bonus or the average target bonuses awarded for the prior years; or (iii) if he is terminated on or following the third anniversary, the bonus will be equal to the greater of the most recent target bonus or the average target bonus awarded for the prior three years. In addition, the employment agreement provides for an option grant covering 275,000 shares of our common stock with the following vesting acceleration terms: if, following a change in control, Mr. Shallcross is terminated without cause, or he terminates his employment for good reason, he will become vested in 24 months' worth of his then unvested shares.

*Thomas Copmann, Ph.D.* We entered into an employment agreement in May 2005 with Dr. Copmann, our Vice President of Regulatory Affairs, which provides for an annual base salary of $200,000 and the possibility of an annual target bonus equal to 28% of his annual base salary upon achievement of certain performance criteria. If Dr. Copmann's employment is terminated without cause, he becomes permanently disabled, or he terminates his employment for good reason, he will receive the following severance benefits following his employment termination: (a) a cash payment of his monthly base salary for 6 months; (b) payment of his monthly COBRA health insurance premiums; and (c) a bonus in an amount equal to a pro-rata portion of the annual target bonus for the year of his termination. In addition, the employment agreement provides for an option grant covering 75,000 shares of our common stock with the following vesting acceleration terms: if, following a change in control, Dr. Copmann is terminated without cause, or he terminates his employment for good reason, he will become vested in 12 months' worth of his then unvested shares.

*Deepak Phadke, Ph.D.* We entered into an offer letter in July 2005 with Dr. Phadke, our Vice President of Manufacturing, which provides for a sign-on bonus of $20,000, $10,000 of which was awarded in his first pay period and the remainder of which will be awarded on the one year anniversary of his start date. We also entered into an employment agreement in August 2005 with Dr. Phadke, which provides for an annual base salary of $170,000 and the possibility of an annual target bonus equal to 15% of his annual base salary upon achievement of certain performance criteria. If Dr. Phadke's employment is terminated without cause, he becomes permanently disabled, or he terminates his employment for good reason, he will receive the following severance benefits following his employment termination: (a) a cash payment of his monthly base salary for 6 months; (b) payment of his monthly COBRA health insurance premiums; and (c) a bonus in an amount equal to a pro-rata portion of the annual target bonus for the year of his termination. In addition, the employment agreement provides for an option grant covering 50,000 shares of our common stock with the following vesting acceleration terms: if, following a change in control, Dr. Phadke is terminated without cause, or he terminates his employment for good reason, he will become vested in 12 months' worth of his then unvested shares.

## Severance and change in control arrangements

See "—Employment agreements" above for a description of the severance and change in control arrangements for Drs. Polymeropoulos, Copmann and Phadke and Messrs. Clark and Shallcross. Drs. Polymeropoulos, Copmann and Phadke and Messrs. Clark and Shallcross will only be eligible to receive severance payments if each officer signs a general release of claims.

The compensation committee of our board of directors, as plan administrator of the Second Amended and Restated Management Equity Plan, has the authority to provide for accelerated vesting of the shares of common stock subject to outstanding options held by our named executive officers and any other person in connection with certain changes in control of Vanda.

## Equity benefit plans

### Second amended and restated management equity plan

*Share reserve.* Our Second Amended and Restated Management Equity Plan was adopted by us in December 2004. We have reserved a total of 5,896,359 shares of our common stock for issuance under the plan as of December 31, 2005. No further option grants will be made under this plan after the effective date of this offering. The options that are outstanding under the plan after the effective date of this offering will continue to be governed by their existing terms. After the effective date of this offering, any shares that remained available for grants under the plan and any shares subject to options or share awards under the plan that are canceled, forfeited or repurchased will not be available for future grants or awards. The plan is administered by our board of directors, or by one or more committees appointed by the Board of Directors.

*Eligibility.* Employees, non-employee members of our board of directors and consultants are eligible to participate in our Second Amended and Restated Management Equity Plan.

*Types of award.* Our Second Amended and Restated Management Equity Plan provides for the purchase of shares of our common stock, and incentive and nonstatutory stock options to purchase shares of our common stock. The exercise price for incentive stock options and nonstatutory stock options granted under the plan may not be less than 100% and 30%, respectively, of the fair market value of our common stock on the option grant date.

Optionees may pay the purchase price or the exercise price by using cash, shares of common stock that the optionee already owns, a full-recourse promissory note, by rendering services to us, by an immediate sale of the option shares through a broker designated by us, or with a loan from a broker designated by us and secured by the option shares. In most cases, our options vest over a four-year period following the date of grant and generally expire 10 years after they are granted, unless the optionee separates from service with us.

*Change in control.* If we merge or consolidate with another company, an option granted under the Second Amended and Restated Management Equity Plan will be subject to the terms of the merger or consolidation agreement, which may provide that the option continues, is assumed or substituted, becomes vested and exercisable in full, or is canceled and the optionees receive a payment.

*Amendments or termination.* Our board of directors may amend or terminate the Second Amended and Restated Management Equity Plan at any time. If our board amends the plan, it does not need to seek stockholder approval of the amendment unless the number of shares reserved under the plan increases or the class of person eligible for the grant of incentive stock options materially changes. The plan will automatically terminate 10 years after its adoption by our board of directors.

**2006 equity incentive plan**

We expect to adopt a 2006 Equity Incentive Plan prior to the closing of this offering with the following material terms:

*Share reserve.* We expect to reserve shares of our common stock for issuance under the 2006 Equity Incentive Plan. On January 1 of each year, starting with the year 2007, the number of shares in the reserve will automatically increase by % of the total number of shares of common stock that are outstanding at that time or, if less, by shares. If options or shares awarded under the 2006 Equity Incentive Plan are forfeited, then those options or shares will again become available for awards under this plan.

*Administration.* The compensation committee of our board of directors will administer the 2006 Equity Incentive Plan. The committee will have the complete discretion to make all decisions relating to the interpretation and operation of this Plan, including the discretion to determine who will receive an award, what type of award it will be, how many shares will be covered by the award, what the vesting requirements will be, if any, and what the other features and conditions of each award will be. The compensation committee will be able to reprice outstanding options and modify outstanding awards in other ways.

*Eligibility.* The following groups of individuals will be eligible to participate in the 2006 Equity Incentive Plan:

- employees
- members of our board of directors who are not employees
- consultants

*Types of awards.* The 2006 Equity Incentive Plan will provide for the following types of award:

- options to purchase shares of our common stock
- stock appreciation rights
- restricted shares of our common stock
- stock units (sometimes called phantom shares)

*Options and stock appreciation rights.* Both incentive stock options and nonstatutory stock options will be available for grant under the 2006 Equity Incentive Plan. An optionee who exercises an incentive stock option may qualify for favorable tax treatment under section 422 of the Internal Revenue Code of 1986. On the other hand, nonstatutory stock options do not qualify for such favorable tax treatment. The exercise price of options and stock appreciation rights granted under the 2006 Equity Incentive Plan may not be less than 100% of the fair market value of our common stock on the grant date. Optionees may pay the exercise price by using:

- cash
- shares of common stock that the optionee already owns
- an immediate sale of the option shares through a broker designated by us
- a full-recourse promissory note

Options and stock appreciation rights will vest at the time or times determined by the compensation committee. In most cases, our options will vest over the four-year period following the date of grant. Options and stock appreciation rights generally expire 10 years after they are granted, except that they generally expire earlier if the optionee's service terminates earlier. The 2006 Equity Incentive Plan will provide that no participant may receive options covering more than 500,000 shares and stock appreciation rights covering more than 500,000 shares in the same year, except that a newly hired employee may receive options covering up to 1,000,000 shares and stock appreciation rights covering up to 1,000,000 shares in the first year of employment.

The 2006 Equity Incentive Plan will also provide for automatic annual option grants to members of our board of directors who are not our employees. See "—Director compensation."

*Restricted shares and stock units.* Restricted shares may be awarded under the 2006 Equity Incentive Plan in return for:

- cash
- a full-recourse promissory note
- services

Restricted shares and stock units will vest at the time or times determined by the compensation committee.

*Change in control.* If a change in control of Vanda occurs, an award under the 2006 Equity Incentive Plan will vest on an accelerated basis to the extent determined by the compensation committee. The compensation committee may determine that outstanding grants will vest in full or in part at the time of the change in control. It may also determine that the grants will vest on an accelerated basis only if the participant is actually or constructively discharged within a specified period of time after the change in control. Finally, the committee will have the discretion to determine that the grants will remain outstanding without acceleration of vesting, except that if the surviving corporation fails to assume an outstanding award or replace it with a comparable award or cash payment, then the award will always become fully vested as a result of the change in control. A change in control will include the following events for purposes of the 2006 Equity Incentive Plan:

- a merger of Vanda after which our own stockholders own 50% or less of the surviving corporation

- a sale of all or substantially all of our assets
- a proxy contest that results in the replacement of 50% or more of our directors over a 24-month period
- an acquisition of % or more of our outstanding stock by any person or group, other than a person related to Vanda (such as a holding company owned by our stockholders)

*Amendments or termination.* Our board will be able to amend or terminate the 2006 Equity Incentive Plan at any time. If our board were to amend the plan, it would not need to ask for stockholder approval of the amendment unless applicable law requires it. The 2006 Equity Incentive Plan would continue in effect indefinitely, unless the board were to decide to terminate the plan.

**401(k) plan**

We have established a 401(k) plan to allow our employees to save on a tax-favorable basis for their retirements. We match contributions made by employees pursuant to the plan.

## Limitation of liability and indemnification of officers and directors

Upon the closing of this offering, we will adopt and file a new amended and restated certificate of incorporation and will amend and restate our bylaws. Our new amended and restated certificate of incorporation and amended and restated bylaws will provide that we will indemnify our directors and officers to the fullest extent permitted by Delaware law, as it now exists or may in the future be amended, against all expenses and liabilities reasonably incurred in connection with their service for or on behalf of us. In addition, the new amended and restated certificate of incorporation will provide that our directors will not be personally liable for monetary damages to us for breaches of their fiduciary duty as directors, unless they violated their duty of loyalty to us or our stockholders, acted in bad faith, knowingly or intentionally violated the law, authorized illegal dividends or redemptions or derived an improper personal benefit from their actions as directors. We maintain liability insurance which insures our directors and officers against certain losses and which insures us against our obligations to indemnify our directors and officers.

In addition, we have entered into indemnification agreements with each of our directors and officers. These agreements, among other things, require us to indemnify each director and officer to the fullest extent permitted by Delaware law, including indemnification of expenses such as attorneys' fees, judgments, fines and settlement amounts incurred by the director or officer in any action or proceeding, including any action or proceeding by or in right of us, arising out of the person's services as a director or officer. At present, we are not aware of any pending or threatened litigation or proceeding involving any of our directors, officers, employees or agents in which indemnification would be required or permitted. We believe provisions in our new amended and restated certificate of incorporation and indemnification agreements are necessary to attract and retain qualified persons as directors and officers.

# Certain relationships and related party transactions

## 2004 Securityholder Agreement

We have entered into a 2004 Securityholder Agreement with certain holders of our Series A Preferred Stock and Series B Preferred Stock, including affiliates of certain of our directors. Under the Securityholders' Agreement, we have granted the following rights to such stockholders:

- rights to demand the registration of our common stock and to participate in other public offerings of our common stock (for more information regarding the registration rights granted pursuant to the 2004 Securityholder Agreement, see "Description of capital stock— Registration rights")
- rights to purchase certain new issuances of our securities (which rights do not apply with respect to, and will terminate upon the completion of, this offering)
- rights to information regarding us (which rights will terminate upon the conversion of our preferred stock into common stock upon completion of this offering)
- rights to inspect our facilities, books, records and to discuss our affairs, finances and accounts with its officers (which rights will terminate upon the conversion of our preferred stock into common stock upon completion of this offering)

Additionally, the 2004 Securityholder Agreement restricts the transfer of securities held by such stockholders, subject to certain exceptions (including a sale made pursuant to a public offering of our stock).

## Voting agreement

We have entered into a voting agreement which provides for the election of certain stockholder-designated directors to our board. This agreement will terminate upon the closing of this offering.

## Indemnification agreements

We have entered into indemnification agreements with each of our directors. These agreements, among other things, require us to indemnify each director to the fullest extent permitted by Delaware law, including indemnification of expenses such as attorneys' fees, judgments, fines and settlement amounts incurred by the director in any action or proceeding, including any action or proceeding by or in right of us, arising out of the person's services as a director.

## Relationship with Care Capital, LLC

From time to time, we reimbursed Care Capital, LLC ("Care Capital"), an affiliate of our stockholders, Care Capital Investments II, LP and Care Capital Offshore Investments II, LP, for certain expenses incurred by Care Capital on our behalf. We reimbursed Care Capital for approximately $54,000 and approximately $299,000 for the year ended December 31, 2004 and for the period from March 13, 2003 (inception) to December 31, 2003, respectively.

We also used the services of a Care Capital employee and reimbursed Care Capital for such personnel services related to occupancy and salary expenses incurred on our behalf. Reimbursements related to such expenses were approximately $31,000 and $49,000 for the year ended December 31, 2004 and the period from March 13, 2003 (inception) to December 31, 2003, respectively.

# Principal stockholders

The following table sets forth certain information known to us regarding beneficial ownership of our common stock as of December 31, 2005 and as adjusted to reflect the sale of the shares of common stock in this offering by:

- each person known by us to be the beneficial owner of more than 5% of our common stock
- our named executive officers
- each of our directors
- all executive officers and directors as a group

Unless otherwise indicated in the footnotes, to our knowledge, each stockholder possesses sole voting and investment power over the shares listed, except for shares owned jointly with that person's spouse.

Beneficial ownership is determined in accordance with the rules of the Securities and Exchange Commission and generally includes voting or investment power with respect to securities. Options and warrants to purchase shares of our common stock that are exercisable within 60 days of December 31, 2005, are deemed to be beneficially owned by the persons holding these options for the purpose of computing percentage ownership of that person, but are not treated as outstanding for the purpose of computing any other person's ownership percentage.

Percentage of shares beneficially owned before the offering is based on 52,603,972 shares of common stock outstanding as of December 31, 2005, assuming the conversion of all outstanding preferred stock to common stock as of such date. Percentage of shares beneficially

owned after the offering is based on shares of common stock outstanding after the closing of the offering.

| Name and address of beneficial owner(1) | Number of shares beneficially owned | Percentage of shares beneficially owned | |
|---|---|---|---|
| | | Before offering | After offering |
| **5% Stockholders** | | | |
| Care Capital Investments II, LP(2)<br>47 Hulfish St., Ste 310<br>Princeton, NJ 08542 | 11,962,159 | 22.74% | |
| Domain Partners VI, L.P.(3)<br>One Palmer Square, Suite 515<br>Princeton, NJ 08542 | 10,603,122 | 20.16% | |
| Biomedical Sciences Investment Fund Pte Ltd.(4)<br>20 Biopolis Way #09-01<br>Centros, Singapore 138668 | 8,514,909 | 16.19% | |
| Prospect Venture Partners II, L.P.(5)<br>435 Tasso St., Ste. 200<br>Palo Alto, CA 94301 | 7,952,342 | 15.12% | |
| Rho Ventures(6)<br>Carnegie Hall Tower<br>152 West 57th Street<br>23rd Floor<br>New York, NY 10019 | 7,952,343 | 15.12% | |
| MedImmune Ventures, Inc.<br>c/o MedImmune, Inc.<br>One MedImmune Way<br>Gaithersburg, MD 20878 | 5,301,562 | 10.08% | |
| **Executive Officers and Directors** | | | |
| Mihael H. Polymeropoulos, M.D.(8) | 339,209 | * | |
| William D. “Chip” Clark(9) | 107,450 | * | |
| Steven A. Shallcross(10) | — | * | |
| Argeris N. Karabelas, Ph.D.(11) | 11,962,159 | 22.74% | |
| Richard W. Dugan(12) | 1,458 | * | |
| Brian K. Halak, Ph.D.(13) | — | * | |
| Wayne T. Hockmeyer, Ph.D.(14) | 5,301,562 | 10.08% | |
| David Ramsay(15) | 11,962,159 | 22.74% | |
| James B. Tananbaum, M.D.(16) | 7,952,342 | 15.12% | |
| Deepak Phadke, Ph.D.(17) | — | * | |
| Thomas Copmann, Ph.D.(18) | 75,000 | * | |
| All executive officers and directors as a group | 25,739,180 | 48.93% | |

* Represents beneficial ownership of less than one percent of our outstanding common stock.

(1) Unless otherwise indicated, the address for each beneficial owner is c/o Vanda Pharmaceuticals Inc., 9605 Medical Center Drive, Suite 300, Rockville, Maryland 20850.

(2) Includes 11,194,286 shares held of record by Care Capital Investments II, LP and 767,873 shares held of record by Care Capital Offshore Investments II, LP. Voting and/or dispositive decisions with respect to the shares held by Care Capital Investments II, LP and Care Capital Offshore Investments II, LP are made by the managing members of their general partner,

Care Capital II, LLC: Jan Leschly, Argeris N. Karabelas, Ph.D., David R. Ramsay and Richard J. Markham, each of whom disclaims beneficial ownership of such shares except to the extent of his pecuniary interest therein.

(3) Includes 10,490,691 shares held of record by Domain Partners VI, L.P. and 112,431 shares held of record by DP VI Associates, L.P. Voting and/or dispositive decisions with respect to the shares held by Domain Partners VI, L.P. and DP VI Associates, L.P. are made by the managing members of their general partner, One Palmer Square Associates VI, L.L.C.: James C. Blair, Ph.D., Brian H. Dovey, Robert J. More, Kathleen K. Schoemaker, Jesse I. Treu, Ph.D. and Nicole Vitullo, each of whom disclaims beneficial ownership of such shares except to the extent of his or her pecuniary interest therein.

(4) Represents 8,514,909 shares issuable upon the conversion of Series B Preferred Stock purchased by Biomedical Sciences Investment Fund Pte Ltd. Dispositive decisions with respect to the shares held by Biomedical Sciences Investment Fund Pte. Ltd. are made by the Investment Committee and Executive Committee of Bio*One Capital Pte Ltd., the fund manager of Biomedical Sciences Investment Fund Pte Ltd. Both Biomedical Sciences Investment Fund Pte Ltd. and Bio*One Capital Pte Ltd. are wholly owned by EDB Investments Pte Ltd., a Singapore government entity.

(5) Includes 7,833,056 shares held of record by Prospect Venture Partners II, L.P. and 119,286 shares held of record by Prospect Associates II, L.P. Voting and/or dispositive decisions with respect to the shares held by Prospect Venture Partners II, L.P. and Prospect Associates II, L.P. are made by their general partner, Prospect Management Co. II, L.L.C. The managing members of Prospect Management Co. II, L.L.C. are David Schnell, M.D., James B. Tananbaum, M.D., Alex Barkas, Ph.D., and Russell Hirsch, M.D., each of whom disclaims beneficial ownership of such shares except to the extent of his pecuniary interest therein.

(6) Includes 995,716 shares held of record by Rho Ventures IV, L.P., 2,442,961 shares held of record by Rho Ventures IV GmbH & Co. Beteiligungs KG, 2,344,164 shares held of record by Rho Ventures IV (QP), L.P. and 2,169,502 shares held of record by Rho Management Trust I. Voting and/or dispositive decisions with respect to the shares held by Rho Ventures IV, L.P. and Rho Ventures IV (QP), L.P. are made by the managing members of their general partner, Rho Management Ventures IV, L.L.C.: Mark Leschly, Habib Kairouz and Joshua Ruch, each of whom disclaims beneficial ownership of such shares except to the extent of his pecuniary interest therein. Voting and/or dispositive decisions with respect to the shares held by Rho Ventures IV GhmbH&Co. Beteiligungs KG are made by the managing directors of its general partner, Rho Capital Partners Verwaltungs GmbH: Mark Leschly, Habib Kairouz and Joshua Ruch, each of whom disclaims beneficial ownership of such shares except to the extent of his pecuniary interest therein. Voting and/or dispositive decisions with respect to the shares held by Rho Management Trust I are made by the managing partners of its investment advisor Rho Capital Partners, Inc.: Mark Leschly, Habib Kairouz and Joshua Ruch, each of whom disclaims beneficial ownership of such shares except to the extent of his pecuniary interest therein.

(7) Voting and/or dispositive decisions with respect to the shares held by MedImmune Ventures, Inc. are made by its investment committee, of which Wayne T. Hockmeyer, Ph.D. is a member. Dr. Hockmeyer disclaims beneficial ownership of such shares except to the extent of his pecuniary interest therein, which Dr. Hockmeyer derives solely from his ownership of the stock of MedImmune, Inc., the parent company of MedImmune Ventures, Inc.

(8) Excludes 2,578,261 shares unexercisable as of December 31, 2005.

(9) Excludes 1,168,324 shares unexercisable as of December 31, 2005.

(10) Excludes 500,000 shares unexercisable as of December 31, 2005.

(11) Includes 11,194,286 shares held of record by Care Capital Investments II, LP and 767,873 shares of record held by Care Capital Offshore Investments II, LP. Dr. Karabelas is a managing member of Care Capital II, LLC. Care Capital II, LLC is the general partner of Care Capital Investments II, LP and Care Capital Offshore Investments II, LP. Dr. Karabelas disclaims beneficial ownership of the shares held by Care Capital Investments II, LP and Care Capital Offshore Investments II, LP except to the extent of his pecuniary interest therein.

(12) Excludes 33,542 shares unexercisable as of December 31, 2005.

(13) Excludes 10,490,691 shares held of record by Domain Partners VI, L.P. and 112,431 shares held of record by DP VI Associates, L.P. Although Dr. Halak is affiliated with Domain Partners VI, L.P. and DP VI Associates, L.P., he has no voting or dispositive power over the shares held by either such entity.

(14) Includes 5,301,562 shares held of record by MedImmune Ventures, Inc. Dr. Hockmeyer is the President of MedImmune Ventures, Inc. and is on an investment committee with voting and dispositive power over the Company's shares. He disclaims beneficial ownership of the shares held by MedImmune Ventures, Inc. except to the extent of his pecuniary interest therein, which Dr. Hockmeyer derives solely from his ownership of the stock of MedImmune, Inc., the parent company of MedImmune Ventures, Inc.

(15) Includes 11,194,286 shares held of record by Care Capital Investments II, LP and 767,873 shares held of record held by Care Capital Offshore Investments II, LP. Mr. Ramsay is a Partner of Care Capital, LLC. Care Capital, LLC is the general partner of Care Capital Investments II, LP and Care Capital Offshore Investments II, LP. Mr. Ramsay disclaims beneficial ownership of the shares held by Care Capital Investments II, LP and Care Capital Offshore Investments II, LP except to the extent of his pecuniary interest therein.

(16) Includes 7,833,056 shares held of record by Prospect Venture Partners II, L.P. and 119,286 shares held of record by Prospect Associates II, L.P. Dr. Tananbaum serves as a managing member of Prospect Management Co. II, L.L.C., the general partner of Prospect Venture Partners II, L.P. and Prospect Associates II, L.P. He disclaims beneficial ownership of the shares held of record by Prospect Venture Partners II, L.P. and Prospect Associates II, L.P. except to the extent of his pecuniary interest therein.

(17) Excludes 136,718 shares unexercisable as of December 31, 2005.

(18) Excludes 42,000 shares unexercisable as of December 31, 2005. Includes 75,000 restricted shares which are subject to vesting restrictions.

# Description of capital stock

## General

The following is a summary of the rights of our common stock and preferred stock and related provisions of our restated certificate of incorporation and bylaws as they will be in effect upon the closing of this offering. For more detailed information, please see our Amended and Restated Certificate of Incorporation, Amended and Restated Bylaws, and our 2004 Securityholder Agreement, which are filed as exhibits to the registration statement of which this prospectus is a part.

Immediately following the closing of this offering, our authorized capital stock will consist of shares, each with a par value of $0.01 per share, of which:

- shares are designated as common stock
- shares are designated as preferred stock

At December 31, 2005, we had outstanding 327,535 shares of common stock and 52,276,437 shares of preferred stock. In addition, as of December 31, 2005, 5,072,457 shares of our common stock were subject to outstanding options, and 166,600 shares of our capital stock were subject to outstanding warrants. At December 31, 2005, 317,535 shares of our outstanding common stock were held by our employees and consultants. 183,277 of these shares are subject to a lapsing right of repurchase in our favor, under which we may repurchase these shares upon the termination of the holder's employment or consulting relationship. The number of shares of common stock outstanding as of December 31, 2005 assumes the conversion of all of our outstanding preferred stock outstanding as of such date into 52,276,437 shares of common stock.

## Common stock

### Voting rights

Unless otherwise provided for in our restated certificate of incorporation or required by applicable law, on all matters submitted to our stockholders for vote, our common stockholders will be entitled to one vote per share, voting together as a single class, upon the closing of this offering.

### Dividends

Upon the closing of this offering, our restated certificate of incorporation will provide that subject to preferences that may apply to any shares of preferred stock outstanding at the time, the holders of common stock shall be entitled to share equally in any dividends that our board of directors may determine to issue from time to time. In the event a dividend is paid in the form of shares of common stock or rights to acquire shares of common stock, the holders of common stock shall receive common stock, or rights to acquire common stock, as the case may be. We do not currently expect to pay dividends.

### Liquidation

Upon the closing of this offering, our restated certificate of incorporation will provide that upon our liquidation, dissolution or winding-up, the holders of common stock shall be entitled to share equally all assets remaining after the payment of any liabilities and the liquidation preferences on any outstanding preferred stock.

## Anti-takeover effects of our amended and restated certificate of incorporation, bylaws and Delaware law

Some provisions of Delaware law and our amended and restated certificate of incorporation and bylaws could make the following transactions more difficult:

- our acquisition by means of a tender offer
- our acquisition by means of a proxy contest or otherwise
- removal of our incumbent officers and directors

These provisions, summarized below, are expected to discourage and prevent coercive takeover practices and inadequate takeover bids. These provisions are designed to encourage persons seeking to acquire control of us to first negotiate with our board of directors, and also are intended to provide management with flexibility to enhance the likelihood of continuity and stability in our composition if our board of directors determines that a takeover is not in our best interests or the best interests of our stockholders. These provisions, however, could have the effect of discouraging attempts to acquire us, which could deprive our stockholders of opportunities to sell their shares of common stock at prices higher than prevailing market prices. We believe that the benefits of these provisions, including increased protection of our potential ability to negotiate with the proponent of an unfriendly or unsolicited proposal to acquire or restructure us, outweigh the disadvantages of discouraging takeover proposals because negotiation of takeover proposals could result in an improvement of their terms.

*Election and removal of directors.* Our board of directors is divided into three classes serving staggered three-year terms. This system of electing directors may tend to discourage a third party from making a tender offer or otherwise attempting to obtain control of us because generally at least two stockholders' meetings will be required for stockholders to effect a change in control of the board of directors. Our amended and restated certificate of incorporation and our bylaws contain provisions that establish specific procedures for appointing and removing members of the board of directors. Under our amended and restated certificate of incorporation, vacancies and newly created directorships on the board of directors may be filled only by a majority of the directors then serving on the board, and under our bylaws, directors may be removed by the stockholders only for cause.

*Stockholder meetings.* Under our bylaws, only the board of directors, the Chairman of the board or our Chief Executive Officer may call special meetings of stockholders.

*Requirements for advance notification of stockholder nominations and proposals.* Our bylaws establish advance notice procedures with respect to stockholder proposals and the nomination of candidates for election as directors, other than nominations made by or at the direction of the board of directors or a committee of the board of directors.

*Delaware anti-takeover law.* Upon the closing of this offering, we will be subject to Section 203 of the Delaware General Corporation Law, an anti-takeover law. In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a business combination with an interested stockholder for a period of three years following the date the person became an interested stockholder, unless the business combination or the transaction in which the person became an interested stockholder is approved in a prescribed manner. Generally, a business combination includes a merger, asset or stock sale, or another transaction resulting in a financial benefit to the interested stockholder. Generally, an interested stockholder is a person who, together with affiliates and associates, owns, or within three years prior to the date of determination of interested stockholder status did own, 15% or more of

the corporation's voting stock. The existence of this provision may have an anti-takeover effect with respect to transactions that are not approved in advance by our board of directors, including discouraging attempts that might result in a premium over the market price for the shares of common stock held by stockholders.

*Elimination of stockholder action by written consent.* Our amended and restated certificate of incorporation eliminates the right of stockholders to act by written consent without a meeting after this offering.

*No cumulative voting.* Our amended and restated certificate of incorporation and bylaws do not provide for cumulative voting in the election of directors. Cumulative voting allows a minority stockholder to vote a portion or all of its shares for one or more candidates for seats on the board of directors. Without cumulative voting, a minority stockholder will not be able to gain as many seats on our board of directors based on the number of shares of our stock the stockholder holds as the stockholder would be able to gain if cumulative voting were permitted. The absence of cumulative voting makes it more difficult for a minority stockholder to gain a seat on our board of directors to influence our board's decision regarding a takeover.

*Undesignated preferred stock.* The authorization of undesignated preferred stock makes it possible for our board of directors to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to change control of us.

These and other provisions may have the effect of deferring hostile takeovers or delaying changes in control or management.

## Limitation of liability of directors

To the fullest extent permitted by the Delaware General Corporation Law as it now exists or hereafter may be amended, our directors will not be personally liable to us or our stockholders for monetary damages for breach of fiduciary duty as a director.

If the Delaware General Corporation Law is later amended to authorize the further elimination or limitation of the liability of directors, then the liability of our directors, in addition to the limitation on personal liability provided in our certificate of incorporation, will be limited to the fullest extent permitted by the amended Delaware General Corporation Law. Any repeal or modification of the provisions in our certificate of incorporation by our stockholders relating to the limitation of the liability of our directors will be prospective only and will not adversely affect any limitation on the personal liability of our directors existing at the time of the repeal or modification.

## Warrants

As of December 31, 2005, there were warrants outstanding to purchase a total of 166,600 shares of common stock at a price of $0.40 per share.

## Registration rights

The holders of 10,000 shares of our common stock and 52,276,437 shares of our common stock issuable upon the conversion of our Series A Preferred Stock and Series B Preferred Stock are entitled to rights with respect to the registration of their shares under the Securities Act. These registration rights are contained in our 2004 Securityholder Agreement and are described below. These registration rights will expire five years following the completion of this offering.

**Demand registration rights**

For so long as at least 25% of our outstanding common stock has been first issued in one or more public offerings, stockholders with demand registration rights under our 2004 Securityholder Agreement have the right to require that we register such stockholders' common stock. We are only obligated to effect two registrations in response to these demand registration rights, and we are not obligated to effect any demand registration for shares having an aggregate market value of less than $5,000,000 as of the date notice is given to us to effect such a registration. We may postpone the filing of a registration statement for up to 90 days once in any 12-month period if our board of directors determines in good faith that the filing would be significantly disadvantageous to us and our affiliates, taken as a whole. We must pay all expenses incurred in connection with demand registration rights.

**Incidental registration rights**

If we register any securities for public sale following the closing of this offering, stockholders with incidental registration rights under the 2004 Securityholder Agreement have the right to include their shares in the registration, subject to specified exceptions. The underwriters of any underwritten offering have the right to limit the number of shares registered by these stockholders due to marketing reasons. We must pay all expenses incurred in connection with these incidental registration rights.

**S-3 registration rights**

If we are eligible to file a registration statement on Form S-3, the stockholders with S-3 registration rights under the 2004 Securityholder Agreement can request that we register their shares, provided that the total price of the shares of common stock offered to the public is at least $1,000,000 (before deduction of underwriting discounts and commissions). The holders of S-3 registration rights may only require us to file one Form S-3 registration statement in any 12-month period. We may postpone the filing of a Form S-3 registration statement for up to 90 days once in any 12-month period if our board of directors determines in good faith that the filing would be seriously detrimental to us.

The holder of a warrant to purchase 121,500 shares of our common stock has the right to sell the shares issuable upon the exercise of such warrant in any offering of our stock following this offering, on a prorated basis with any other stockholders participating in such offering. We are obligated to pay the expenses and commissions relating to the registration of such warrant shares.

## Transfer agent and registrar

The transfer agent and registrar for our common stock and the rights is American Stock Transfer and Trust Company.

# Shares eligible for future sale

Prior to this offering, there has been no market for our common stock. Future sales of substantial amounts of our common stock in the public market could adversely affect prevailing market prices from time to time. Furthermore, since only a limited number of shares will be available for sale shortly after this offering because of certain contractual and legal restrictions on resale described below, sales of substantial amounts of our common stock in the public market after the restrictions lapse could adversely affect the prevailing market price and our ability to raise equity capital in the future.

## Sales of restricted shares

Upon completion of this offering, we will have outstanding an aggregate shares of common stock (not including shares which were issued after September 30, 2005 and which were not issued in connection with this offering), assuming no exercise of the underwriters' over-allotment option and no exercise of outstanding options or warrants. Of these shares, the shares sold in this offering will be freely tradable without restrictions or further registration under the Securities Act, unless one of our existing affiliates as that term is defined in Rule 144 under the Securities Act purchases such shares.

The remaining 52,603,972 shares of our common stock held by existing stockholders as of December 31, 2005 are restricted shares or are restricted by the contractual provisions described below. Restricted shares may be sold in the public market only if registered or if they qualify for an exemption from registration under Rules 144, 144(k) or 701 of the Securities Act, which are summarized below. Of these restricted shares, 10,010,000 shares will be available for resale in the public market in reliance on Rule 144(k), all of which shares are restricted by the terms of the lock-up agreements described below. An additional 15,040,654 of these restricted shares will be available for resale in the public market in reliance on Rule 144, all of which shares are restricted by the terms of the lock-up agreements. The remaining 27,553,318 shares become eligible for resale in the public market at various dates thereafter, substantially all of which shares are restricted by the terms of the lock-up agreements and 183,277 of which shares were held by our employees and restricted as of December 31, 2005 by our rights to repurchase such shares upon termination of employment. The table below sets forth the approximate number of shares eligible for future sale:

| Days after date of this prospectus | Approximate additional number of shares becoming eligible for future sale | Comment |
|---|---|---|
| On Effectiveness | | Freely tradable shares sold in offering; shares salable under Rule 144(k) that are not locked up or subject to our rights of repurchase |
| 90 Days | | Shares eligible on effectiveness; vested options for shares salable under Rule 144 and 701 that are not locked up; additional shares no longer subject to our rights of repurchase |
| 180 Days | | Lock-up released; shares and vested options for shares salable under Rule 144, 144(k) and 701; additional shares no longer subject to our rights of repurchase |
| Thereafter | | Restricted securities held for 1 year or less |

Under Rule 144 as currently in effect, beginning 90 days after the date of this prospectus, a person who has beneficially owned restricted shares for at least one year and has complied with the requirements described below would be entitled to sell some of its shares within any three-month period. That number of shares cannot exceed the greater of one percent of the number of shares of our common stock then outstanding, which will equal approximately shares immediately after this offering, or the average weekly trading volume of our common stock on the Nasdaq National Market during the four calendar weeks preceding the filing of a notice on Form 144 reporting the sale. Sales under Rule 144 are also restricted by manner of sale provisions, notice requirements and the availability of current public information about us. Rule 144 also provides that our affiliates who are selling shares of our common stock that are not restricted shares must nonetheless comply with the same restrictions applicable to restricted shares with the exception of the holding period requirement.

Under Rule 144(k), a person who is not deemed to have been one of our affiliates at any time during the 90 days preceding a sale and who has beneficially owned the shares proposed to be

sold for at least two years is entitled to sell those shares without complying with the manner of sale, public information, volume limitation or notice provisions of Rule 144. Accordingly, unless otherwise restricted, these shares may be sold immediately upon the completion of this offering.

## Options

Rule 701 provides that the shares of common stock acquired upon the exercise of currently outstanding options or other rights granted under our Second Amended and Restated Management Equity Plan may be resold, to the extent not restricted by the terms of the lock-up agreements, by persons, other than affiliates, beginning 90 days after the date of this prospectus, restricted only by the manner of sale provisions of Rule 144, and by affiliates in accordance with Rule 144, without compliance with its one-year minimum holding period. 317,535 shares (not including shares issued after December 31, 2005 upon the exercise of options) will be available for resale in the public market in reliance on Rule 701 beginning 90 days after the date of this prospectus, all of which shares are restricted by the terms of the lock-up agreements and 183,277 shares of which were restricted as of December 31, 2005 by our rights to repurchase such shares upon termination of employment. As of December 31, 2005, our board of directors had authorized an aggregate of up to 5,896,359 shares of common stock for issuance under our existing equity plans. As of December 31, 2005 options to purchase a total of 5,072,457 shares of common stock were outstanding, all of which options were exercisable as of such date. Of these, as of December 31, 2005 options to purchase a total of 4,634,202 shares were restricted by our right to repurchase unvested shares upon the termination of an optionee's business relationship with us, and options to purchase a total of 438,255 shares were no longer restricted by our right of repurchase and will be eligible for sale, if not restricted by the terms of the lock-up agreements, in the public market in accordance with Rule 701 under the Securities Act beginning 90 days after the date of this prospectus. All of the shares issuable upon exercise of these options are restricted by the terms of the lock-up agreements.

We intend to file one or more registration statements on Form S-8 under the Securities Act following this offering to register all shares of our common stock which have been issued or are issuable upon exercise of outstanding stock options or other rights granted under our equity plans. These registration statements are expected to become effective upon filing. Shares covered by these registration statements will thereupon be eligible for sale in the public market, upon the expiration or release from the terms of the lock-up agreements, to the extent applicable, or subject in certain cases to vesting of such shares.

## Warrants

As of December 31, 2005, we had outstanding warrants exercisable for a total of 166,600 shares of our common stock, all of which are currently exercisable. 45,100 of these shares are restricted by the terms of such warrants.

## Lock-up agreements

Except for sales of common stock to the underwriters in accordance with the terms of the underwriting agreement, we and our executive officers, directors, holders of substantially all of our outstanding stock and substantially all of our optionholders have agreed not to sell or otherwise dispose of, directly or indirectly, any shares of our common stock (or any security

convertible into or exchangeable or exercisable for common stock) without the prior written consent of J.P. Morgan Securities Inc. and Banc of America Securities LLC for a period of 180 days from the date of this prospectus. In addition, for a period of 180 days from the date of this prospectus, except as required by law, we have agreed that our board of directors will not consent to any offer for sale, sale or other disposition, or any transaction which is designed or could be expected to result in the disposition by any person, directly or indirectly, of any shares of our common stock without the prior written consent of J.P. Morgan Securities Inc. and Banc of America Securities LLC, in their sole discretion, at any time or from time to time and without notice, may release for sale in the public market all or any portion of the shares restricted by the terms of the lock-up agreements.

### Registration rights

The holders of 52,286,437 shares of common stock, including common stock issuable upon the exercise of our Series A Preferred Stock and Series B Preferred Stock, are entitled to have their shares registered by us under the Securities Act under the terms of an agreement between us and the holders of these registrable securities. Subject to limitations specified in the agreement, these registration rights include the following:

- the holders of at least 25% of the then outstanding registrable securities may require, on two occasions beginning six months after the date of this prospectus, that we use our best efforts to register the registrable securities for public resale
- if we register any common stock, either for our own account or for the account of other security holders, the holders of registrable securities are entitled to include their shares of common stock in the registration, subject to the ability of the underwriters to limit the number of shares included in the offering in view of market conditions
- the holders of at least 25% of the then outstanding registrable securities may require us to register all or a portion of their registrable securities on Form S-3 once in any twelve-month period when use of that form becomes available to us, provided that the proposed aggregate selling price is at least $1,000,000 before underwriting discounts and commissions

All such registration rights terminate five years following the closing of this offering.

## Material United States federal tax consequences

The following is a general discussion of the material U.S. federal income and estate tax consequences of the ownership and disposition of common stock by a beneficial owner that is a “non-U.S. holder”, other than a non-U.S. holder that owns, or has owned, actually or constructively, more than 5% of the company’s common stock. A “non-U.S. holder” is a person or entity that, for U.S. federal income tax purposes, is a:

- non-resident alien individual, other than certain former citizens and residents of the United States subject to tax as expatriates,
- foreign corporation or
- foreign estate or trust.

A “non-U.S. holder” does not include an individual who is present in the United States for 183 days or more in the taxable year of disposition and is not otherwise a resident of the United States for U.S. federal income tax purposes. Such an individual is urged to consult his or

her own tax advisor regarding the U.S. federal income tax consequences of the sale, exchange or other disposition of common stock.

This discussion is based on the Internal Revenue Code of 1986, as amended (the "Code"), and administrative pronouncements, judicial decisions and final, temporary and proposed Treasury Regulations, changes to any which subsequent to the date of this prospectus may affect the tax consequences described herein. This discussion does not address all aspects of U.S. federal income and estate taxation that may be relevant to non-U.S. holders in light of their particular circumstances such as non-U.S. holders subject to special tax treatment under U.S. federal tax laws (including partnerships or other pass-through entities, "controlled foreign corporations," "passive foreign investment companies," banks and insurance companies, dealers in securities, holders of securities held as part of a "straddle," "hedge," "conversion transaction" or other risk-reduction transaction, non-U.S. holders that do not hold our common stock as a capital asset and persons who hold or receive common stock as compensation). In addition, this discussion does not address any tax consequences arising under the laws of any state, local or foreign jurisdiction.

We have not requested a ruling from the IRS in connection with the tax consequences described herein. Accordingly, the discussion below neither binds the Internal Revenue Service ("IRS") nor precludes it from adopting a contrary position.

**IN VIEW OF THE FOREGOING AND BECAUSE THE FOLLOWING DISCUSSION IS INTENDED AS A GENERAL SUMMARY ONLY, YOU ARE URGED TO CONSULT YOUR OWN TAX ADVISORS AS TO THE SPECIFIC TAX CONSEQUENCES OF THE OWNERSHIP OR DISPOSITION OF OUR STOCK, INCLUDING THE APPLICABLE FEDERAL, STATE, LOCAL AND FOREIGN TAX CONSEQUENCES, IN LIGHT OF YOUR OWN PARTICULAR TAX SITUATIONS.**

## Dividends

As discussed under "Dividend policy" above, the company does not currently expect to pay dividends. In the event that the company does pay dividends, dividends paid to a non-U.S. holder of common stock generally will be subject to withholding tax at 30% rate or a reduced rate specified by an applicable income tax treaty. In order to obtain a reduced rate of withholding, a non-U.S. holder will be required to provide an IRS Form W-8BEN certifying its entitlement to benefits under a treaty.

The withholding tax does not apply to dividends paid to a non-U.S. holder who provides a Form W-8ECI, certifying that the dividends are effectively connected with the non-U.S. holder's conduct of a trade or business within the United States. Instead, the effectively connected dividends will be subject to regular U.S. income tax as if the non-U.S. holder were a U.S. resident, subject to an applicable income tax treaty providing otherwise. A non-U.S. corporation receiving effectively connected dividends may also be subject to an additional "branch profits tax" imposed at a rate of 30% (or a lower treaty rate).

## Gain on disposition of common stock

A non-U.S. holder generally will not be subject to U.S. federal income tax on gain realized on a sale or other disposition of common stock unless:

- the gain is effectively connected with a trade or business of the non-U.S. holder in the United States, subject to an applicable treaty providing otherwise,

- the company is or has been a U.S. real property holding corporation, as defined below, at any time within the five-year period preceding the disposition or the non-U.S. holder's holding period, whichever period is shorter, and its common stock has ceased to be traded on an established securities market prior to the beginning of the calendar year in which the sale or disposition occurs.

In general, we would be a U.S. real property holding corporation if interests in U.S. real estate comprised the majority of our assets. The company believes that it is not, and does not anticipate becoming, a U.S. real property holding corporation.

## Information reporting requirements and backup withholding

Information returns will be filed with the Internal Revenue Service in connection with payments of dividends and the proceeds from a sale or other disposition of common stock. A non-U.S. holder may have to comply with certification procedures to establish that it is not a United States person in order to avoid information reporting and backup withholding tax requirements. The certification procedures required to claim a reduced rate of withholding under a treaty will satisfy the certification requirements necessary to avoid the backup withholding tax as well. The amount of any backup withholding from a payment to a non-U.S. holder will be allowed as a credit against such holder's United States federal income tax liability and may entitle such holder to a refund, provided that the required information is furnished to the IRS.

## Federal estate tax

Individual non-U.S. holders and entities the property of which is potentially includible in such an individual's gross estate for U.S. federal estate tax purposes (for example, a trust funded by such an individual and with respect to which the individual has retained certain interests or powers), should note that, absent an applicable treaty benefit, the common stock will be treated as U.S. situs property subject to U.S. federal estate tax.

# Underwriters

Under the terms and subject to the conditions contained in an underwriting agreement dated the date of this prospectus, the underwriters named below, for whom J.P. Morgan Securities Inc. and Banc of America Securities LLC are acting as representatives, have severally agreed to purchase, and we have agreed to sell to them, severally, the number of shares indicated below:

| Underwriters | Number of shares |
|---|---|
| J.P. Morgan Securities Inc. | |
| Banc of America Securities LLC | |
| Thomas Weisel Partners LLC | |
| Total | |

The underwriters are offering the shares of common stock subject to their acceptance of the shares from us and subject to prior sale. The underwriting agreement provides that the obligations of the several underwriters to pay for and accept delivery of the shares of common stock offered by this prospectus are subject to the approval of specified legal matters by their counsel and to other conditions. The underwriters are obligated to take and pay for all of the shares of common stock offered by this prospectus if any such shares are taken. However, the underwriters are not required to take or pay for the shares covered by the underwriters' over-allotment option described below.

The underwriters initially propose to offer the shares of common stock directly to the public at the initial public offering price listed on the cover page of this prospectus and to certain dealers at a price that represents a concession not in excess of $ per share under the public offering price. Any underwriter may allow, and such dealers may reallow, a concession not in excess of $ per share to other underwriters or to certain dealers. After the initial public offering of the shares of common stock, the offering price and other selling terms may from time to time be varied by the representatives.

We have granted to the underwriters an option, exercisable for 30 days from the date of this prospectus, to purchase up to an aggregate of additional shares of common stock at the public offering price listed on the cover page of this prospectus, less underwriting discounts and commissions. The underwriters may exercise this option solely for the purpose of covering over-allotments, if any, made in connection with the offering of the shares of common stock offered by this prospectus. To the extent the option is exercised, each underwriter will become obligated, subject to certain conditions, to purchase about the same percentage of the additional shares of common stock as the number listed next to the underwriter's name in the preceding table bears to the total number of shares of common stock listed next to the names of all underwriters in the preceding table. If the underwriters option is exercised in full, the total price to the public would be $ , the total underwriters discounts and commissions would be $ and the total proceeds to us would be $ .

The underwriters have informed us that they do not intend sales to discretionary accounts to exceed five percent of the total number of shares of common stock offered by them.

We, each of our directors and officers and holders of substantially all of our outstanding stock have agreed that, without the prior written consent of J.P. Morgan Securities Inc. and Banc of America Securities LLC on behalf of the underwriters, we and they will not, during the period ending 180 days after the date of this prospectus:

- offer, pledge, announce the intention to sell, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase of or otherwise transfer or dispose of, directly or indirectly, any shares of common stock or any securities convertible into or exercisable or exchangeable for common stock
- enter into any swap or other agreement that transfers to another, in whole or in part, any of the economic consequences of ownership of the common stock

whether any transaction described above is to be settled by delivery of common stock or such other securities, in cash or otherwise. These restrictions do not apply to:

- in the case of a corporation, the transfer of shares of our common stock or any shares convertible into common stock to any wholly-owned subsidiary of such corporation, provided that in such case, the transferee will execute an agreement stating that the transferee is subject to the restrictions described above
- transactions relating to shares of common stock or other securities acquired in open market transactions after the completion of the offering of the shares, provided that no filing or other public announcement by any party under the Exchange Act shall be required or made in connection with subsequent sales of common stock or other securities acquired in such open market transactions (other than a filing on a Form 5 made after the expiration of the 180-day period referred to above)
- transfers of any shares of common stock or other securities convertible into common stock made as a gift, to a trust, to limited partners, limited liability company members or stockholders of our executive officers, directors, or holders of substantially all of our stock, or to immediate family members, provided that the transferee agrees to be bound by the restrictions described above and if the donor or transferor is a reporting person subject to Section 16(a) of the Exchange Act, any gifts or transfers made in accordance with this paragraph will not require such person to and such person will not voluntarily, file a report of such transaction on Form 4 under the Exchange Act.

Notwithstanding the foregoing, if (1) during the last 17 days of the 180-day restricted period, we issue an earnings release or material news or a material event relating to us occurs; or (2) prior to the expiration of the 180-day restricted period, we announce that we will release earnings results during the 16-day period beginning on the last day of the 180-day period, the restrictions described above shall continue to apply until the expiration of the 18-day period beginning on the issuance of the earnings release or the occurrence of the material news or material event.

See the section entitled “Shares eligible for future sale” for further discussion of certain transfer restrictions.

The following table shows the underwriting discounts and commissions that we are to pay to the underwriters in connection with this offering. These amounts are shown assuming both no exercise and full exercise of the underwriters' option to purchase additional shares of our common stock.

| Paid by Vanda | No exercise | Full exercise |
|---|---|---|
| Per Share | $ | $ |
| Total | $ | $ |

We estimate that the total expenses of this offering payable by us, not including the underwriting discounts and commissions, will be approximately $ million.

In order to facilitate the offering of the common stock, the underwriters may engage in transactions that stabilize, maintain or otherwise affect the price of the common stock. Specifically, the underwriters may sell more shares than they are obligated to purchase under the underwriting agreement, creating a short position. A short sale is covered if the short position is no greater than the number of shares available for purchase by the underwriters under the over-allotment option. The underwriters can close out a covered short sale by exercising the over-allotment option or purchasing shares in the open market. In determining the source of shares to close out a covered short sale, the underwriters will consider, among other things, the open market price of shares compared to the price available under the over-allotment option. The underwriters may also sell shares in excess of the over-allotment option, creating a naked short position. The underwriters must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the common stock in the open market after pricing that could adversely affect investors who purchase in this offering. In addition, to stabilize the price of the common stock, the underwriters may bid for, and purchase, shares of common stock in the open market. Finally, the underwriting syndicate may reclaim selling concessions allowed to an underwriter or a dealer for distributing the common stock in this offering, if the syndicate repurchases previously distributed common stock in transactions to cover syndicate short positions or to stabilize the price of the common stock. Any of these activities may stabilize or maintain the market price of the common stock above independent market levels. The underwriters are not required to engage in these activities, and may end any of these activities at any time.

We will apply to have our common stock approved for quotation on the Nasdaq National Market under the trading symbol "VNDA."

We and the underwriters have agreed to indemnify each other against certain liabilities, including liabilities under the Securities Act of 1933, as amended.

Certain of the underwriters or their affiliates have provided from time to time, and may provide in the future, investment and commercial banking and financial advisory services to Vanda and its affiliates in the ordinary course of business, for which they have received and may continue to receive customary fees and commissions.

A prospectus in electronic format will be made available on the websites maintained by one or more of the lead managers of this offering and may also be made available on websites maintained by other underwriters. The underwriters may agree to allocate a number of shares to underwriters for sale to their online brokerage account holders. Internet distributions will be

allocated by the lead managers to underwriters that may make Internet distributions on the same basis as other allocations.

Prior to this offering, there has been no public market for our common stock. The initial public offering price will be determined by negotiations between us and the representatives. Among the factors to be considered in determining the initial public offering price will be our future prospects and those of our industry in general, our revenues, earnings and other financial operating information in recent periods, and the price-earnings ratios, price-sales ratios, market prices of securities and financial and operating information of companies engaged in activities similar to ours. The estimated initial public offering price range set forth on the cover page of this preliminary prospectus is subject to change as a result of market conditions and other factors.

# Legal matters

Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP, Waltham, Massachusetts, will pass upon the validity of the common stock offered by this prospectus. Edward T. Lentz, Esq. will pass upon certain intellectual property matters. Davis Polk & Wardwell will pass upon certain legal matters for the underwriters.

# Experts

The financial statements as of December 31, 2005 and 2004 and for the years ended December 31, 2005 and 2004 and the period from March 13, 2003 (date of inception) to December 31, 2003, and, cumulatively, for the period from March 13, 2003 (date of inception) to December 31, 2005 included in this prospectus have been so included in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

# Where you can find more information

We have filed with the Securities and Exchange Commission (SEC), Washington, D.C. 20549, a registration statement on Form S-1 under the Securities Act of 1933, with respect to our common stock offered hereby. This prospectus, which forms part of the registration statement, does not contain all of the information set forth in the registration statement and the exhibits and schedules to the registration statement. Some items are omitted in accordance with the rules and regulations of the SEC. For further information about us and our common stock, we refer you to the registration statement and the exhibits and schedules to the registration statement filed as part of the registration statement. Statements contained in this prospectus as to the contents of any contract or other document filed as an exhibit are qualified in all respects by reference to the actual text of the exhibit. You may read and copy the registration statement, including the exhibits and schedules to the registration statement, at the SEC's Public Reference Room at 100 F Street N.E., Washington, D.C. 20549. You can obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. In addition, the SEC maintains an Internet site at *www.sec.gov,* from which you can electronically access the registration statement, including the exhibits and schedules to the registration statement.

Upon completion of this offering, we will be subject to the information reporting requirements of the Securities Exchange Act of 1934 and we intend to file reports, proxy statements and other information with the SEC.

## Index to consolidated financial statements

# Vanda Pharmaceuticals Inc.
### (A development stage company)
### December 31, 2004 and 2005

# Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of
Vanda Pharmaceuticals Inc. (A development stage company)

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of operations, changes in stockholders' equity and cash flows present fairly, in all material respects, the financial position of Vanda Pharmaceuticals Inc. and its subsidiary (a development stage company) at December 31, 2004 and 2005, and the results of operations and cash flows for the period from March 13, 2003 (date of inception) to December 31, 2003 and the years ended December 31, 2004 and 2005 and for the period from March 13, 2003 (date of inception) to December 31, 2005 in conformity with accounting principles generally accepted in the United States of America. 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 of these statements in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

/s/ PricewaterhouseCoopers LLP
McLean, Virginia
February 15, 2006

# Vanda Pharmaceuticals Inc.
## (A development stage company)
## Consolidated Balance Sheets

| | December 31, | | |
|---|---|---|---|
| | | 2005 | |
| | 2004 | Actual | Pro forma (unaudited) |
| **Assets** | | | |
| Current assets | | | |
| Cash and cash equivalents | $ 16,259,770 | $ 21,012,815 | |
| Short-term investments | — | 10,141,189 | |
| Prepaid expenses and other current assets | 190,604 | 2,217,960 | |
| Total current assets | 16,450,374 | 33,371,964 | |
| Property and equipment, net | 1,251,867 | 1,110,576 | |
| Deposits | 50,000 | 840,000 | |
| Restricted cash | — | 430,230 | |
| Total assets | $ 17,752,241 | $ 35,752,770 | |
| **Liabilities and stockholders' equity** | | | |
| Current liabilities | | | |
| Accounts payable | $ 718,606 | $ 2,254,897 | |
| Accrued liabilities | 689,428 | 2,528,091 | |
| Deferred rent and credit on lease concession, current | 3,549 | 8,131 | |
| Current portion of long-term debt | 173,929 | 142,461 | |
| Current portion of capital lease | 37,241 | — | |
| Deferred grant revenue | — | 129,950 | |
| Total current liabilities | 1,622,753 | 5,063,530 | |
| Deferred rent and credit on lease concession, less current portion | 30,371 | 24,433 | |
| Long-term debt, less current portion | 142,487 | — | |
| Capital lease, less current portion | 13,043 | — | |
| Total liabilities | 1,808,654 | 5,087,963 | |
| Commitments | | | |
| Stockholders' equity | | | |
| Series A Preferred Stock, $0.001 par value; 10,000,000 shares authorized, issued and outstanding at December 31, 2004 and 2005, respectively; liquidation preference of $10,000,000 | 9,963,541 | 9,963,541 | |
| Series B Preferred Stock, $0.001 par value; 42,276,437 shares authorized; 15,040,654 and 42,276,437 shares issued and outstanding at December 31, 2004 and 2005, respectively; liquidation preference of $52,000,018 | 18,345,023 | 51,831,646 | |
| Common stock, $0.001 par value; 50,000,000 and 70,000,000 shares authorized and 10,000 and 327,535 shares issued and outstanding at December 31, 2004 and 2005, respectively | 10 | 328 | 52,604 |
| Additional paid-in capital | 340,630 | 23,982,752 | 85,725,663 |
| Deferred stock-based compensation | (257,934) | (18,766,443) | (18,766,443) |
| Accumulated other comprehensive loss | (2,576) | (17,609) | (17,609) |
| Deficit accumulated during the development stage | (12,445,107) | (36,329,408) | (36,329,408) |
| Total stockholders' equity | 15,943,587 | 30,664,807 | 30,664,807 |
| Total liabilities and stockholders' equity | $ 17,752,241 | $ 35,752,770 | |

*The accompanying notes are an integral part of these consolidated financial statements.*

# Vanda Pharmaceuticals Inc.
## (A development stage company)
## Consolidated Statements of Operations

| | Period from March 13, 2003 (inception) to December 31, 2003 | Year ended December 31, 2004 | Year ended December 31, 2005 | Period from March 13, 2003 (inception) to December 31, 2005 |
|---|---|---|---|---|
| Revenues from services | $ 47,565 | $ 33,980 | $ — | $ 81,545 |
| Operating expenses: | | | | |
| Research and development | 2,010,532 | 7,442,983 | 16,890,615 | 26,344,130 |
| General and administrative | 1,052,659 | 2,119,394 | 7,396,038 | 10,568,091 |
| Total operating expenses | 3,063,191 | 9,562,377 | 24,286,653 | 36,912,221 |
| Loss from operations | (3,015,626) | (9,528,397) | (24,286,653) | (36,830,676) |
| Other income (expense): | | | | |
| Interest income | 52,595 | 100,785 | 435,537 | 588,917 |
| Interest expense | (8,090) | (41,934) | (25,629) | (75,653) |
| Other income | 300 | 209 | 93 | 602 |
| Total other income | 44,805 | 59,060 | 410,001 | 513,866 |
| Loss before tax expense | (2,970,821) | (9,469,337) | (23,876,652) | (36,316,810) |
| Tax expense | — | 4,949 | 7,649 | 12,598 |
| Net loss | (2,970,821) | (9,474,286) | (23,884,301) | (36,329,408) |
| Beneficial conversion feature— deemed dividend to preferred stockholders | — | — | (33,486,623) | (33,486,623) |
| Net loss attributable to common stockholders | $ (2,970,821) | $ (9,474,286) | $ (57,370,924) | $ (69,816,031) |
| Basic and diluted net loss per share applicable to common stockholders | $ (297.08) | $ (947.43) | $ (1,019.29) | |
| Shares used in calculation of basic and diluted net loss per share applicable to common stockholders | 10,000 | 10,000 | 56,285 | |
| Pro forma net loss per share applicable to common stockholders (see Note 2) (unaudited) | | | $ (1.93) | |
| Shares used in calculation of pro forma net loss per share applicable to common stockholders (see Note 2) (unaudited) | | | 29,672,060 | |

*The accompanying notes are an integral part of these consolidated financial statements.*

# Vanda Pharmaceuticals Inc.
## (A development stage company)
## Statements of Changes in Stockholders' Equity

| | Series A preferred stock | | Series B preferred stock | | Common stock | | Additional paid-in capital | Deferred stock-based compensation | Accumulated other comprehensive loss | Deficit accumulated during the development stage | Comprehensive loss | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Shares | Par value | Shares | Par value | Shares | Par value | | | | | | |
| **Balances at March 13, 2003 (Inception)** | — | $ — | — | $ — | — | $ — | $ — | $ — | $ — | $ — | $ — | $ — |
| Issuance of Series A Preferred Stock, net of issuance costs of $36,459 | 10,000,000 | 9,963,541 | — | — | — | — | — | — | — | — | — | 9,963,541 |
| Issuance of Class A Common Stock | — | — | — | — | 10,000 | 10 | 3,990 | — | — | — | — | 4,000 |
| Issuance of warrants in connection with capital lease | — | — | — | — | — | — | 12,628 | — | — | — | — | 12,628 |
| Comprehensive loss: | | | | | | | | | | | | |
| Net loss | — | — | — | — | — | — | — | — | — | (2,970,821) | (2,970,821) | |
| Cumulative translation adjustment | — | — | — | — | — | — | — | — | (2,315) | — | (2,315) | |
| Comprehensive loss | | | | | | | | | | | (2,973,136) | (2,973,136) |
| **Balances at December 31, 2003** | 10,000,000 | 9,963,541 | — | — | 10,000 | 10 | 16,618 | — | (2,315) | (2,970,821) | — | 7,007,033 |
| Issuance of Series B Preferred Stock, net of issuance costs of $154,982 | — | — | 15,040,654 | 18,345,023 | — | — | — | — | — | — | — | 18,345,023 |
| Issuance of warrants in connection with consulting services | — | — | — | — | — | — | 27,945 | — | — | — | — | 27,945 |
| Deferred compensation associated with stock options grants | — | — | — | — | — | — | 281,130 | (281,130) | — | — | — | — |
| Amortization of deferred stock-based compensation | — | — | — | — | — | — | — | 23,196 | — | — | — | 23,196 |

# Vanda Pharmaceuticals Inc.
## (A development stage company)
## Statements of Changes in Stockholders' Equity (continued)

| | Series A preferred stock | | Series B preferred stock | | Common stock | | Additional paid-in capital | Deferred stock-based compensation | Accumulated other comprehensive loss | Deficit accumulated during the development stage | Comprehensive loss | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Shares | Par value | Shares | Par value | Shares | Par value | | | | | | |
| Expense related to accelerated unvested stock options | — | — | — | — | — | — | 14,937 | — | — | — | — | 14,937 |
| Comprehensive loss: | | | | | | | | | | | | |
| Net loss | — | — | — | — | — | — | — | — | — | (9,474,286) | (9,474,286) | |
| Cumulative translation adjustment | — | — | — | — | — | — | — | — | (261) | — | (261) | |
| Comprehensive loss | | | | | | | | | | | (9,474,547) | (9,474,547) |
| **Balances at December 31, 2004** | 10,000,000 | 9,963,541 | 15,040,654 | 18,345,023 | 10,000 | 10 | 340,630 | (257,934) | (2,576) | (12,445,107) | — | 15,943,587 |
| Issuance of Series B Preferred Stock net of issuance costs of $13,391 | — | — | 27,235,783 | 33,486,623 | — | — | — | — | — | — | — | 33,486,623 |
| Issuance of common stock from exercised stock options | — | — | — | — | 317,535 | 318 | 31,436 | — | — | — | — | 31,754 |
| Deferred compensation associated with stock options grants | — | — | — | — | — | — | 18,788,385 | (18,788,385) | — | — | — | — |
| Deferred compensation associated with remeasurement of unvested stock grants | — | — | — | — | — | — | 1,702,625 | (1,702,625) | — | — | — | — |

# Vanda Pharmaceuticals Inc.
## (A development stage company)
## Statements of Changes in Stockholders' Equity (continued)

| | Series A preferred stock | | Series B preferred stock | | Common stock | | Additional paid-in capital | Deferred stock-based compensation | Accumulated other comprehensive loss | Deficit accumulated during the development stage | Comprehensive loss | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Shares | Par value | Shares | Par value | Shares | Par value | | | | | | |
| Expense related to remeasurement of stock options | — | — | — | — | — | — | 3,119,676 | — | — | — | — | 3,119,676 |
| Amortization of deferred stock-based compensation | — | — | — | — | — | — | — | 1,982,501 | — | — | — | 1,982,501 |
| Beneficial conversion feature—deemed dividend on issuance of Series B Preferred Stock | — | — | — | — | — | — | 33,486,623 | — | — | — | — | 33,486,623 |
| Beneficial conversion feature—accretion of beneficial conversion feature for Series B Preferred Stock | — | — | — | — | — | — | (33,486,623) | — | — | — | — | (33,486,623) |
| Comprehensive loss: | | | | | | | | | | | | |
| Net loss | — | — | — | — | — | — | — | — | — | (23,884,301) | (23,884,301) | |
| Cumulative translation adjustment | — | — | — | — | — | — | — | — | (17,711) | — | (17,711) | |
| Unrealized gains on short-term investments | — | — | — | — | — | — | — | — | 2,678 | — | 2,678 | |
| Comprehensive loss | | | | | | | | | | | (23,899,334) | (23,899,334) |
| **Balances at December 31, 2005** | 10,000,000 | $9,963,541 | 42,276,437 | $51,831,646 | 327,535 | $ 328 | $ 23,982,752 | $ (18,766,443) | $ (17,609) | $(36,329,408) | — | $ 30,664,807 |

*The accompanying notes are an integral part of these consolidated financial statements.*

# Vanda Pharmaceuticals Inc.
## (A development stage company)
## Consolidated Statements of Cash Flows

| | Period from March 13, 2003 (inception) to December 31, 2003 | Year ended December 31, 2004 | Year ended December 31, 2005 | Period from March 13, 2003 (inception) to December 31, 2005 |
|---|---|---|---|---|
| **Cash flows from operating activities** | | | | |
| Net loss | $ (2,970,821) | $ (9,474,286) | (23,884,301) | (36,329,408) |
| Adjustments to reconcile net loss to net cash used in operating activities | | | | |
| Depreciation and amortization | 79,891 | 376,709 | 423,828 | 880,428 |
| Stock-based compensation | — | 66,078 | 5,102,177 | 5,168,255 |
| Accretion of discount on investments | — | — | (42,335) | (42,335) |
| Changes in assets and liabilities: | | | | |
| Accounts receivable | (28,489) | 28,489 | — | — |
| Prepaid expenses and other current assets | (97,044) | (93,024) | (2,027,544) | (2,217,960) |
| Deposits | — | (50,000) | (790,000) | (840,000) |
| Accounts payable | 458,608 | 415,506 | 1,514,868 | 2,254,897 |
| Accrued expenses | 432,474 | 99,335 | 1,860,539 | 2,528,091 |
| Deferred grant revenue | — | — | 129,950 | 129,950 |
| Deferred rent and credit on lease concession | 17,661 | 16,259 | (1,356) | 32,564 |
| Net cash used in operating activities | (2,107,720) | (8,614,934) | (17,714,174) | (28,435,518) |
| **Cash flows from investing activities** | | | | |
| Purchases of property and equipment | (1,161,921) | (414,531) | (291,978) | (1,868,430) |
| Purchases of short-term investments | — | — | (11,846,176) | (11,846,176) |
| Maturities of short-term investments | — | — | 1,750,000 | 1,750,000 |
| Investments in restricted cash | — | — | (430,230) | (430,230) |
| Net cash used in investing activities | (1,161,921) | (414,531) | (10,818,384) | (12,394,836) |
| **Cash flows from financing activities** | | | | |
| Proceeds from borrowings on note payable | 515,147 | — | — | 515,147 |
| Principal payments on obligations under capital lease | — | (42,887) | (51,569) | (94,456) |
| Principal payments on note payable | (45,010) | (156,446) | (172,617) | (374,073) |
| Proceeds from the issuance of preferred stock, net of issuance costs | 9,963,541 | 18,345,023 | 33,486,623 | 61,795,187 |
| Proceeds from exercise of stock options | — | — | 31,754 | 31,754 |
| Proceeds from issuance of common stock | 4,000 | — | — | 4,000 |
| Net cash provided by financing activities | 10,437,678 | 18,145,690 | 33,294,191 | 61,877,559 |
| Effect of foreign currency translation | (2,315) | (22,177) | (8,588) | (34,390) |
| Net increase in cash and cash equivalents | 7,165,722 | 9,094,048 | 4,753,045 | 21,012,815 |
| **Cash and cash equivalents** | | | | |
| Beginning of period | — | 7,165,722 | 16,259,770 | — |
| End of period | $ 7,165,722 | $ 16,259,770 | 21,012,815 | 21,012,815 |
| **Supplemental disclosure** | | | | |
| Cash payments for interest | $ 4,221 | $ 41,354 | $ 25,043 | $ 70,618 |
| **Supplemental disclosure of noncash financing activities** | | | | |
| Equipment acquired through obligation under capital lease | $ — | $ 95,305 | $ — | $ 95,305 |

*The accompanying notes are an integral part of these consolidated financial statements.*

# Vanda Pharmaceuticals Inc.
## (A development stage company)
## Notes to consolidated financial statements
### December 31, 2004 and 2005

## 1. Business organization and presentation

### Business organization

Vanda Pharmaceuticals Inc. ("Vanda" or the "Company") was founded in November 2002 and commenced its operations on March 13, 2003. Vanda is a biopharmaceutical company focused on the development and commercialization of small molecule therapeutics, with exclusive worldwide commercial rights to three product candidates in clinical development for various central nervous system disorders. The Company's lead product candidate, iloperidone, is a compound for the treatment of schizophrenia and bipolar disorder and is in a Phase III trial for schizophrenia. The Company's second product candidate, VEC-162, is a compound for the treatment of insomnia and depression and is entering a Phase III trial for insomnia. VEC-162 is also ready for Phase II trials for the treatment of depression. The Company's third product candidate, VSF-173, is a compound for the treatment of excessive sleepiness and is ready for a Phase II trial. Each of these product candidates benefits from new chemical entity (NCE) patent protection and may offer substantial advantages over approved therapies.

The Company expects to complete its Phase III trial for iloperidone in the first half of 2007. If this trial is successful, the Company will file a New Drug Application (NDA) for approval with the Food and Drug Administration (FDA) later that year. The Company recently completed an efficacy and safety Phase II trial of VEC-162 for insomnia and expects to begin a Phase III trial early in 2006. The Company also expects to begin a Phase II trial of VSF-173 for excessive sleepiness in the second half of 2006.

Vanda Pharmaceuticals Pte. Ltd. ("Vanda Singapore") is a limited liability company domiciled and incorporated in Singapore on February 24, 2003 as a wholly-owned subsidiary of Vanda Pharmaceuticals Inc. Vanda Singapore's principal activity is drug research using genetic and genomic sciences.

### Capital resources

Although the Company was incorporated in November 2002, the Company did not commence operations until March 13, 2003, the date on which the Company first issued capital stock and began incurring expenses. Prior to March 13, 2003, the Company did not have any assets or liabilities, directly incur any expenses, or indirectly incur any expenses by a related party. Since its inception, the Company has devoted substantially all of its efforts to business planning, research and development, recruiting management and technical staff, acquiring operating assets and raising capital. Accordingly, the Company is considered to be in the development stage as defined in Statement of Financial Accounting Standards (SFAS) No. 7, *Accounting and Reporting by Development Stage Enterprises*.

The Company's activities will necessitate significant uses of working capital throughout 2006 and beyond. Additionally, the Company's capital requirements will depend on many factors, including the success of the Company's research and development efforts, payments received under contractual agreements with other parties, if any, and the status of competitive products. The Company plans to continue financing operations with the cash received from the

private placement of Series B Preferred Stock (see Note 8) and the Company plans to seek additional sources of funding in 2006. The Company's failure to raise additional capital, as and when needed, could have a negative impact on the financial condition and the ability of the Company to execute its business strategy. In the absence of our ability to raise additional private equity capital, we are also prepared and have the ability to curtail our existing clinical trial commitments and extend them in such a manner so that we have operating funds through the end of 2007.

**Basis of presentation**

The accompanying consolidated financial statements include the accounts of the Company and its wholly-owned subsidiary. All inter-company balances and transactions have been eliminated. The accompanying consolidated financial statements are prepared in accordance with accounting principles generally accepted in the United States of America.

**Unaudited pro forma balance sheet**

The unaudited pro forma balance sheet gives effect to the conversion of the Series A and B Preferred Stock in the event of an initial public offering ("IPO"), as if it occurred on December 31, 2005. Each share of the Company's Series A and B Preferred Stock shall be converted into common stock on a one-for-one basis automatically upon consummation of an IPO.

## 2. Summary of significant accounting policies

**Cash and cash equivalents**

For purposes of the consolidated balance sheet and consolidated statement of cash flows, cash equivalents represent all highly-liquid investments with an original maturity date of three months or less. At December 31, 2005, the Company maintained all of its cash and cash equivalents in two financial institutions. Deposits held with these institutions may exceed the amount of insurance provided on such deposits. Generally, these deposits may be redeemed upon demand, and the Company believes there is minimal risk of losses on such cash balances.

**Short-term investments**

The Company maintained highly-liquid investments throughout the period ending December 31, 2005, which were classified as available-for-sale because they can be utilized for current operations. The Company's investment policy requires the selection of high-quality issuers, with bond ratings of AAA to A1+/ P1. These available-for-sale securities are accounted for at their fair market value and unrealized gains and losses on these securities, if any, are included in accumulated other comprehensive loss in stockholders' equity. Interest and dividend income is recorded when earned and included in interest income. Premiums and discounts on short-term investments are amortized and accreted to maturity and included in interest income. The Company uses the specific identification method in computing realized gains and losses on the sale of investments, which would be included in the consolidated statements of operations when generated. For the period from March 13, 2003 (inception) to December 31, 2003 and for

# Vanda Pharmaceuticals Inc.
## (A development stage company)
## Notes to consolidated financial statements—(continued)
### December 31, 2004 and 2005

the years ended December 31, 2004 and 2005, the Company did not have any realized gains or losses.

The following is a summary of the Company's "available-for-sale" marketable securities as of December 31, 2005:

| | Amortized cost | Gross unrealized gains | Gross unrealized losses | Fair market value |
|---|---|---|---|---|
| U.S. government agencies | $ 6,054,023 | $ 847 | $ — | $ 6,054,870 |
| U.S. corporate debt | 4,084,488 | 1,831 | — | 4,086,319 |
| | $ 10,138,511 | $ 2,678 | $ — | 10,141,189 |

**Concentrations of credit risk**

Financial instruments which potentially subject the Company to significant concentrations of credit risk consist primarily of cash and cash equivalents and short-term investments. The Company places its cash and cash equivalents and short-term investments with highly-rated financial institutions.

**Fair value of financial instruments**

The carrying amounts of the Company's financial instruments, which include cash and cash equivalents, short-term investments, and accounts payable, approximate their fair values due to their short maturities. The fair value of the long-term debt approximates its carrying value based on the variable nature of interest rates and current market rates available to the Company.

**Property and equipment**

Property and equipment are stated at cost less accumulated depreciation and amortization. Depreciation of property and equipment is provided on a straight-line basis over the estimated useful lives of the assets, generally three to seven years. Amortization of leasehold improvements is provided on a straight-line basis over the shorter of their estimated useful life or the lease term. The costs of additions and betterments are capitalized, and repairs and maintenance costs are charged to operations in the period incurred.

Upon retirement or disposition of property and equipment, the cost and accumulated depreciation are removed from the accounts and any resulting gain or loss is reflected in general and administrative expenses for that period.

**Impairment of long-lived assets**

The Company assesses the recoverability of its long-lived assets by determining whether the carrying value of such assets can be recovered through undiscounted future operating cash flows. If impairment is indicated, the Company measures the amount of such impairment by

comparing the fair value to the carrying value. There have been no indicators of impairment through December 31, 2005.

**Restricted cash**

During 2005, in conjunction with the lease of the office and laboratory space building, the Company provided the landlord with a letter of credit, which was collateralized with a restricted cash deposit in the amount of $430,230 (see Note 6). The deposit is recorded as non-current restricted cash at December 31, 2005.

**Deferred grant revenue**

Vanda Singapore entered into an agreement with the Economic Development Board of Singapore ("EDB") to provide a grant for a Development Project. During 2005, the Company submitted its first asset-related claim with the EDB and received a cash payment of $127,866. Given that the Company has not met the conditions attached to the grant, the payment has been recorded as deferred grant revenue on the balance sheet at December 31, 2005. Management expects that a resolution is likely to be reached with the EDB in the near future.

**Translation of foreign currency**

The functional currency of the Company's wholly-owned foreign subsidiary located in Singapore is the local currency. Assets and liabilities of the Company's foreign subsidiary are translated to United States dollars based on exchange rates at the end of the reporting period. Income and expense items are translated at weighted average exchange rates prevailing during the reporting period. Translation adjustments are accumulated in a separate component of stockholder's equity. Translation gains or losses are included in the determination of operating results.

**Other comprehensive income (loss)**

SFAS No. 130, *Reporting Comprehensive Income,* requires a full set of general-purpose financial statements to include the reporting of "comprehensive income." Other comprehensive loss is composed of two components, net loss and other comprehensive income. At December 31, 2004 and 2005, other comprehensive loss of $2,576 and $17,609, respectively, consists of cumulative translation adjustments due to foreign currency and unrealized gains on short-term investments.

**Revenue recognition**

Revenue is recognized upon delivery of products to customers. Revenue earned under research and development contracts are recognized in accordance with the proportional performance method outlined in Staff Accounting Bulletin No. 104 whereby the extent of progress toward completion is measured on the cost-to-cost basis; however, revenue recognized at any point will not exceed the cash received. When the current estimates of total contract revenue and contract cost indicate a loss, a provision for the entire loss on the contract is made in the

period which it becomes probable. All costs related to these agreements are expensed as incurred. Revenue is derived principally from consulting agreements the Company entered into during its start-up phase to defray research costs. Vanda completed its obligations under these agreements during the year ended December 31, 2004, and no longer seeks such arrangements.

The Company will use the substantive milestone payment method for its revenues recognition policy. Under this method, revenue is recognized when all milestones to be received under contractual arrangements are determined to be substantive, at-risk and the culmination of an earnings process. Substantive milestones are payments that are conditioned upon an event requiring substantive effort, when the amount of the milestone is reasonable relative to the time, effort and risk involved in achieving the milestones and when the milestones are reasonable relative to each other and the amount of any up-front payment. If these criteria are not met, the timing of the recognition of revenue from the milestone payment may be deferred.

**Research and development expenses**

Research and development costs are expensed as incurred and include the cost of salaries, building costs, utilities, allocation of indirect costs, and expenses to third parties who conduct research and development, pursuant to development and consulting agreements, on behalf of the Company. Costs related to the acquisitions of intellectual property are expensed as incurred since the underlying technology associated with these acquisitions were made in connection with the Company's research and development efforts and have no alternative future use.

**General and administrative expenses**

General and administrative costs are expensed as incurred and consist primarily of salaries and other related costs for personnel serving executive, finance, accounting, information technology and human resource functions. Other costs include facility costs not otherwise included in research and development expense and professional fees for legal and accounting services.

**Interest income and expense**

Interest income consists of interest earned on the Company's cash and cash equivalents and short-term investments. Interest expense consists of interest incurred on equipment debt.

**Accounting for stock-based compensation**

As provided by SFAS No. 123, *Accounting for Stock-Based Compensation* (SFAS 123), the Company has elected to continue to account for its stock-based compensation programs according to the provisions of Accounting Principles Board Opinion No. 25, (APB 25) *Accounting for Stock Issued to Employees.* Accordingly, compensation expense has been recognized to the extent of employee or director services rendered based on the intrinsic value

# Vanda Pharmaceuticals Inc.
## (A development stage company)
## Notes to consolidated financial statements—(continued)
### December 31, 2004 and 2005

of compensatory options or shares granted under the plans. Under APB 25, compensation expense is recognized over the vesting period of the option to the extent that the fair value of the stock exceeds the exercise price of the stock at the date of grant.

Variable stock-based compensation awards are amortized and expensed in accordance with Financial Accounting Standards Board ("FASB") Interpretation No. 28, *Accounting for Stock Appreciation Rights and Other Variable Stock Option Plan or Award Plans,* an accelerated vesting model. Under this model, all stock based employee compensation charges are amortized over the vesting periods of the individual stock awards.

Had the Company determined compensation cost based on the fair value at the grant date for its stock options under SFAS 123, the Company's net loss and basic and diluted net loss attributable to common stockholders per share would have been changed to the following pro forma amounts:

| | Period from March 13, 2003 (inception) to December 31, 2003 | Year ended December 31, 2004 | Year ended December 31, 2005 |
|---|---|---|---|
| Net loss attributable to common stockholders | $ (2,970,821) | $ (9,474,286) | $ (57,370,924) |
| Add: Stock based employee compensation expense included in net loss | — | 38,133 | 5,102,177 |
| Less: Stock-based employee compensation expense determined under SFAS 123 | (33,160) | (57,954) | (5,167,246) |
| Pro forma net loss applicable to common stockholders | $ (3,003,981) | $ (9,494,107) | $ (57,435,993) |
| Net loss per share: | | | |
| Basic and diluted, net loss attributed to common stockholders as reported | $ (297.08) | $ (947.43) | $ (1,019.29) |
| Pro forma basic and diluted, net loss attributed to common stockholders | $ (300.40) | $ (949.41) | $ (1,020.45) |

The weighted average fair value of an option granted during the period from March 13, 2003 (inception) to December 31, 2003 and years ended December 31, 2004 and 2005 was $0.32, $1.20, and $4.50 respectively. The fair value of each option grant is estimated on the date of

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the grant using the Black-Scholes option pricing model with the following assumptions for each year:

| | Period from March 13, 2003 (inception) to December 31, 2003 | Year ended December 31, 2004 | Year ended December 31, 2005 |
|---|---|---|---|
| Expected dividend yield | 0% | 0% | 0% |
| Expected volatility | 0% | 67% | 67%-68% |
| Expected term (years) | 10 | 5 | 5 |
| Weighted average risk-free interest rate | 3.65% | 3.42% | 4.00% |

Given the lack of an active public market for our common stock, the Company's board of directors determined the fair value of the Company's common stock for stock option awards and the Company did not employ a third party valuation firm to determine fair value. In establishing the Company's estimates of fair value, the Company considered the guidance set forth in the AICPA Practice Guide, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*, and made retrospective determinations of fair value. Information on stock option grants, net of forfeitures, during the previous two years ended December 31, 2005 is summarized as follows:

| Issuance | Date of Type of equity issuance | Number of options granted | Exercise price(1) | Fair market value estimate per common share | Intrinsic value per share |
|---|---|---|---|---|---|
| 06/15/04 | Employee Options | 11,400 | $ 0.10 | $ 0.97 | $ 0.87 |
| 09/01/04 | Employee Options | 303,400 | $ 0.10 | $ 1.23 | $ 1.13 |
| 12/06/04 | Employee Options | 2,573 | $ 0.10 | $ 1.72 | $ 1.62 |
| 02/10/05 | Employee Options | 694,739 | $ 0.10 | $ 3.18 | $ 3.08 |
| 04/05/05 | Employee Options | 92,000 | $ 0.10 | $ 4.83 | $ 4.73 |
| 08/15/05 | Employee Options | 51,500 | $ 0.10 | $ 5.09 | $ 4.99 |
| 09/28/05 | Employee Options | 2,055,272 | $ 0.10 | $ 5.09 | $ 4.99 |
| 10/03/05 | Employee Options | 3,000 | $ 0.10 | $ 5.19 | $ 5.09 |
| 11/14/05 | Employee Options | 275,000 | $ 0.25 | $ 5.19 | $ 4.94 |
| 12/29/05 | Employee Options | 1,187,763 | $ 1.43 | $ 5.19 | $ 3.76 |

(1) The Company's board of directors approved a modification to all outstanding stock option awards that were granted prior to February 10, 2005, repricing the options from their original exercise price of $0.40 to $0.10. According to FIN 44, the result of such a modification is to account for the modified stock option awards as variable from the date of the modification to the date the awards are exercised, forfeited, or cancelled. The Company remeasured the modified awards that were outstanding at the end of each quarter during the year ended December 31, 2005.

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**Stock warrants**

The Company accounts for warrants granted to consultants and advisors under SFAS 123 and Emerging Issues Task Force Issue 96-18, *Accounting for Equity Investments that are Issued to Other Than Employees for Acquiring or in Conjunction with Selling Goods or Services,* ("EITF 96-18"). As such, warrants granted to non-employees are periodically re-measured and expense is incurred during their vesting terms.

**Income taxes**

The Company accounts for income taxes under the liability method in accordance with provisions of SFAS No. 109, *Accounting for Income Taxes,* ("SFAS 109") which requires companies to account for deferred income taxes using the asset and liability method. Under the asset and liability method, current income tax expense or benefit is the amount of income taxes expected to be payable or refundable for the current year. A deferred income tax asset or liability is recognized for future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and tax credits and loss carryforwards. Deferred tax assets are reduced by a valuation allowance when, in the opinion of management, it is more likely than not that some portion or all of the deferred tax assets will not be realized. Tax rate changes are reflected in income during the period such changes are enacted. Changes in ownership may limit the amount of net operating loss carryforwards that can be utilized in the future to offset taxable income.

**Net loss per share**

Net loss attributable to common stockholders per share is calculated in accordance with SFAS No. 128, *Earnings per Share,* and Staff Accounting Bulletin ("SAB") No. 98. Basic earnings per share ("EPS") is calculated by dividing the net income or loss attributable to common stockholders by the weighted average number of common shares outstanding, reduced by the weighted average unvested common shares subject to repurchase.

Diluted EPS is computed by dividing the net income or loss attributable to common stockholders by the weighted average number of other potential common stock outstanding for the period. Other potential common stock include Series A and B Preferred Stock, stock options and warrants but only to the extent that their inclusion is dilutive. The Company incurred a net loss in all periods presented, causing inclusion of any potentially dilutive securities to have an anti-dilutive affect, resulting in dilutive loss per share attributable to common stockholders and basic loss per share attributable to common stockholders being equivalent. The Company did not have any common shares issued for nominal consideration as defined under the terms of SAB No. 98, which would be included in EPS calculations.

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### December 31, 2004 and 2005

| | Period from March 13, 2003 (inception) to December 31, 2003 | Year ended December 31, 2004 | Year ended December 31, 2005 |
|---|---|---|---|
| **Historical:** | | | |
| Numerator: | | | |
| Net loss | $ (2,970,821) | $ (9,474,286) | $ (23,884,301) |
| Beneficial conversion feature— deemed dividend to preferred stockholders | — | — | (33,486,623) |
| Net loss attributable to common stockholders | $ (2,970,821) | $ (9,474,286) | $ (57,370,924) |
| Denominator: | | | |
| Weighted average common shares outstanding | 10,000 | 10,000 | 100,455 |
| Weighted average unvested common shares subject to repurchase | — | — | (44,170) |
| Denominator for basic and diluted net loss per share | 10,000 | 10,000 | 56,285 |
| Basic and diluted net loss per share applicable to common stockholders | $ (297.08) | $ (947.43) | $ (1,019.29) |
| **Historical outstanding anti-dilutive securities not included in diluted net loss per share calculation:** | | | |
| Series A and B Preferred Stock | 10,000,000 | 25,040,654 | 52,276,437 |
| Options to purchase common stock | 772,100 | 1,042,480 | 5,072,457 |
| Warrants to purchase common stock | 45,100 | 166,600 | 166,600 |
| | 10,817,200 | 26,249,734 | 57,515,494 |

The unaudited pro forma shares used to compute basic and diluted net loss per share is the weighted average shares of common stock outstanding, reduced by the weighted average unvested common shares subject to repurchase, and includes the assumed conversion of the Series A and B Preferred Stock into shares of common stock using the as-if converted method as of January 1, 2005 or the actual date of issuance if later.

# Vanda Pharmaceuticals Inc.
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### December 31, 2004 and 2005

| | Year ended December 31, 2005 |
|---|---|
| **Pro forma (unaudited):** | |
| Numerator: | |
| Pro forma net loss attributable to common stockholders | $ (57,370,924) |
| Denominator: | |
| Weighted average common shares outstanding | 56,285 |
| Pro forma adjustments to reflect assumed weighted average effect on conversion of preferred stock | 29,615,775 |
| Pro forma shares used to compute basic and diluted net loss per share | 29,672,060 |
| Basic and diluted pro forma net loss per share applicable to common stockholders | $ (1.93) |

**Certain Risks and Uncertainties**

The Company's product candidates under development require approval from the Food and Drug Administration (FDA) or other international regulatory agencies prior to commercial sales. There can be no assurance the products will receive the necessary clearance. If the Company is denied clearance or clearance is delayed, it may have a material adverse impact on the Company.

The Company's products are concentrated in rapidly-changing, highly-competitive markets, which are characterized by rapid technological advances, changes in customer requirements and evolving regulatory requirements and industry standards. Any failure by the Company to anticipate or to respond adequately to technological developments in its industry, changes in customer requirements or changes in regulatory requirements or industry standards, or any significant delays in the development or introduction of products or services, could have a material adverse effect on the Company's business, operating results and future cash flows.

The Company depends on single source suppliers for critical raw materials for manufacturing, as well as other components required for the administration of its product candidates. The loss of these suppliers could delay the clinical trials or prevent or delay commercialization of the product candidates.

**Segment information**

Management has determined that the Company operates in one business segment which is the development and commercialization of pharmaceutical products.

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## (A development stage company)
## Notes to consolidated financial statements—(continued)
### December 31, 2004 and 2005

**Use of estimates**

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates that affect the reported amounts of assets and liabilities at the date of the financial statements, disclosure of contingent assets and liabilities, and the reported amounts of revenue and expenses during the reporting period. Actual results could differ from those estimates.

**Recent accounting pronouncements**

In December 2004, the FASB issued SFAS No. 123R, *Share-Based Payment,* a revision of SFAS No. 123, *Accounting for Stock-based Compensation.* SFAS 123R requires companies to recognize expense associated with share-based compensation arrangements, including employee stock options, using a fair value-based option pricing model, and eliminates the alternative to use APB 25's intrinsic method of accounting for share-based payments. In accordance with the new pronouncement, the Company plans to begin recognizing the expense associated with its share-based payments, as determined using a fair-value-based method, in its statements of operations beginning on January 1, 2006. Adoption of the expense provisions of SFAS 123R are expected to have a material impact on the Company's results of operations and net loss per share. The standard generally allows two alternative transition methods in the year of adoption— modified prospective application and retroactive application with restatement of prior financial statements to include the same amounts that were previously included in the pro forma disclosures. On January 1, 2006 the Company adopted SFAS 123R using the modified prospective method of implementation and adopted the accelerated vesting method. According to the modified prospective method the previously issued financial statements will not be adjusted and the deferred compensation balances recorded within the shareholders' equity will be eliminated as of January 1, 2006 against the additional paid-in capital account. On January 1, 2006, there was approximately $19.7 million in unamortized compensation expense under the fair value method that will be recognized in the future over the remaining service periods through 2009.

In order to provide implementation guidance related to SFAS 123R, the Securities and Exchange Commission ("SEC") issued Staff Accounting Bulletin ("SAB") No. 107, *Share-Based Payment* in March 2005. SAB 107 provides guidance on numerous issues such as valuation methods (including assumptions such as expected volatility and expected term), the classification of compensation expense, capitalization of compensation cost related to share-based payment arrangements, the accounting for income tax effects of share-based payment arrangements upon adoption of SFAS 123R, and disclosures in MD&A subsequent to adoption of SFAS 123R.

SFAS No. 154, *Accounting Changes and Error Corrections— a Replacement of APB Opinion No. 20 and FASB Statement No. 3* was issued by the FASB in May 2005. This Statement replaces APB Opinion No. 20, *Accounting Changes*, and FASB Statement No. 3, *Reporting Accounting Changes in Interim Financial Statements*, and changes the requirements for the accounting for and reporting of a change in accounting principle. SFAS No. 154 applies to all voluntary changes in accounting principle and requires retrospective application to prior

periods' financial statements of changes in accounting principle, unless it is impracticable to determine either the period-specific effects or the cumulative effect of the change. This Statement also requires that a change in depreciation, amortization, or depletion method for long-lived, non-financial assets be accounted for as a change in accounting estimate affected by a change in accounting principle. This statement is effective for accounting changes and corrections of errors made in fiscal years beginning after December 15, 2005. SFAS No. 154 is not expected to have a material effect on the Company's consolidated financial statements.

In November 2005, the FASB Staff issued FASB Staff Position ("FSP") FAS 115-1, *The Meaning of Other-Than-Temporary Impairment and Its Application to Certain Investments.* FSP FAS 115-1 addresses the determination as to when an investment is considered impaired, whether that impairment is other than temporary, and the measurement of an impairment loss. This FSP also includes accounting considerations subsequent to the recognition of an other-than-temporary impairment and requires certain disclosures about unrealized losses that have not been recognized as other-than-temporary impairments. The guidance in this FSP amends FASB Statements No. 115, *Accounting for Certain Investments in Debt and Equity Securities*, and No. 124, *Accounting for Certain Investments Held by Not-for-Profit Organizations*, and APB Opinion No. 18, *The Equity Method of Accounting for Investments in Common Stock*. The guidance in this FSP shall be applied to reporting periods beginning after December 15, 2005. Earlier application is permitted. FSP FAS 115-1 is not expected to have a material effect on the Company's consolidated financial statements.

## 3. Property and equipment

Property and equipment— at cost:

| | December 31, | |
|---|---|---|
| | 2004 | 2005 |
| Computer equipment | $ 698,405 | $ 739,001 |
| Laboratory equipment | 681,455 | 730,232 |
| Furniture and fixtures | 29,309 | 101,556 |
| Leasehold improvements | 304,972 | 302,228 |
| Construction in progress | — | 120,851 |
| | 1,714,141 | 1,993,868 |
| Less— accumulated depreciation and amortization | (462,274) | (883,292) |
| | $ 1,251,867 | $ 1,110,576 |

Depreciation and amortization expense for the period from March 13, 2003 (inception) to December 31, 2003 and years ended December 31, 2004 and 2005 was $79,891, $376,709 and $423,828, respectively.

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## (A development stage company)
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### December 31, 2004 and 2005

## 4. Accrued expenses

Accrued expenses consist of the following:

| | December 31, | |
|---|---|---|
| | 2004 | 2005 |
| Bonus accrual | $ 284,143 | $ 530,311 |
| Accrued professional fees | 192,977 | 71,000 |
| Accrued research and development expenses | 172,730 | 1,862,288 |
| Employee benefits | 33,680 | 46,063 |
| Other accrued expenses | 5,898 | 18,429 |
| Total accrued expenses | $ 689,428 | $ 2,528,091 |

## 5. Line of credit facility

In 2003, the Company entered into a $515,147 line of credit facility to finance the purchase of specified equipment based on lender-approved schedules. The interest rate was fixed at 9.3% per annum. The Company has granted a security interest in the assets purchased under the credit line. During 2003, the full line of credit amount was drawn down. During 2004 and 2005, the Company had no draw downs under the line of credit. During 2004 and 2005, the Company repaid $156,446 and $172,617 on the line of credit, respectively. The total indebtedness relating to this line of credit was $316,416 and $142,461 as of December 31, 2004 and 2005, respectively.

Interest expense for the line of credit facility for the period from March 13, 2003 (inception) to December 31, 2003 and the years ended December 31, 2004 and 2005 was $3,971, $41,668, and $21,887, respectively.

The following is a schedule of remaining principal payments under borrowings as of December 31, 2005:

| | |
|---|---|
| 2006 | $ 146,944 |
| Less: Portion representing interest | 4,483 |
| Current portion | $ 142,461 |

## 6. Commitments

**Lease agreements**

In 2003, the Company entered into a five-year non-cancelable operating lease agreement for office and laboratory space. The lease expires in June 2008. The lease contains an option to renew for an additional five years on the same terms and conditions. The lease contains a 3% annual escalation.

# Vanda Pharmaceuticals Inc.
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In August 2005, the Company entered into a ten-year, six-month non-cancelable operating lease agreement for office and laboratory space at a new office complex, which is renewable for an additional five-year period at the end of the original term. The lease expires in June 2016. The Company will take possession of the lease space during 2006. The lease includes a rent abatement and scheduled base rent increases over the term of the lease. The total amount of the base rent payments and rent abatement will be charged to expense on a straight-line method over the term of the lease. In conjunction with a letter of credit, the Company collateralized the operating lease with a restricted cash deposit in the amount of $430,230 in September 2005, which is recorded as non-current restricted cash at December 31, 2005.

In 2004, the Company entered into a capital lease obligation at an interest rate of 7.5%. The lease obligation was payable in monthly installments of $3,312 through April 2006. The Company capitalized the equipment in accordance with Statement of Financial Accounting Standard No. 13, *Accounting for Leases* (SFAS 13). SFAS 13 requires the capitalization of leases meeting certain criteria, with the related asset being recorded in property and equipment and an offsetting amount recorded as a liability. During 2005, the Company repaid the capital lease obligation in full.

The following is a schedule of future minimum lease payments for non-cancelable operating leases as of December 31, 2005:

| | | |
|---|---|---|
| 2006 | $ | 503,064 |
| 2007 | | 642,347 |
| 2008 | | 536,404 |
| 2009 | | 427,260 |
| 2010 | | 440,182 |
| Thereafter | | 2,669,569 |
| | $ | 5,218,826 |

Total rent expense for the period from March 13, 2003 (inception) through December 31, 2003 and the years ended December 31, 2004 and 2005 was $143,174, $315,241 and 299,234, respectively.

**License and clinical agreements**

***License agreements***

In July 2004, the Company acquired exclusive rights to develop and commercialize iloperidone through a sublicense agreement with Novartis AG (“Novartis”). In consideration for this license, the Company paid Novartis an initial license fee of $500,000, which was immediately expensed to research and development expenses on the Consolidated Statements of Operations for the year ended December 31, 2004. The Company is obligated to make future milestone payments to Novartis of less than $100 million in the aggregate (the majority of which are tied to sales

milestones), as well as royalty payments to Novartis which, as a percentage of net sales, is in the mid-twenties. The Company's rights with respect to these patents and to commercialize iloperidone may terminate in whole or in part if the Company breaches its royalty obligations, covenants in the sublicense regarding our financial condition or certain restrictions in the sublicense regarding other development activities.

In February 2004, the Company entered into a license agreement with Bristol-Myers Squibb (BMS) under which the Company received an exclusive worldwide license under certain patents and patent applications to develop and commercialize VEC-162. In partial consideration for the license, the Company paid BMS an initial license fee of $500,000, which was immediately expensed in research and development expenses on the Consolidated Statements of Operations for the year ended December 31, 2004. The Company is obligated to make future milestone payments to BMS of less than $40 million in the aggregate (the majority of which are tied to sales milestones) as well as royalty payments based on the net sales of VEC-162 at a rate which, as a percentage of net sales, is in the low teens. The Company is also obligated under this agreement to pay BMS a royalty on certain payments (excluding royalties) that the Company receives from a third party in connection with any sublicensing arrangement, at a rate in the mid-twenties. Either party may terminate the agreement under certain circumstances.

In July 2004, the Company entered into a license agreement with Novartis under which the Company received an exclusive worldwide license to develop and commercialize VSF-173. In consideration for the license, the Company paid Novartis an initial license fee of $500,000, which was immediately expensed in research and development expenses on the Consolidated Statements of Operations for the year ended December 31, 2004. The Company is also obligated to make future milestone payments to Novartis of less than $50 million in the aggregate (the majority of which are tied to sales milestones) and royalty payments which, as a percentage of net sales, is in the low to mid teens. Either party may terminate the agreement under certain circumstances, including a material breach of the agreement by the other.

**Clinical agreements**

During 2004 and 2005, the Company entered into agreements with clinical organizations to provide services relating to iloperidone and VEC-162 under fee service arrangements. The Company incurred a total of $915,631 and $6,305,044 in charges under these arrangements during the years ended December 31, 2004 and 2005, respectively. $3,003,843 of these charges during the year ended December 31, 2005 were incurred under agreements that have expired; the other $3,301,201 in charges were incurred for clinical services rendered in connection with the Company's current Phase III trial for Iloperidone and VEC-162.

The Company's current agreements for clinical services may be terminated on no more than 60 days' notice without incurring additional charges (other than charges for work completed but not paid for through the effective date of termination and other costs incurred by the Company's contractors in closing out work in progress as of the effective date of termination). Assuming that the Company's upcoming Phase III trials for iloperidone and VEC-162 are completed in accordance with our expectations, the Company will incur estimated additional

charges of approximately $20.9 million and $9.9 million from such contractual obligations during the years ended December 31, 2006 and 2007, respectively.

## 7. Related party transactions

From time to time, the Company reimbursed Care Capital, LLC (“Care”), an affiliate of the majority shareholder of the Company, for certain expenses paid by Care on behalf of the Company. The Company reimbursed Care for approximately $299,000 and $54,000 for the period from March 13, 2003 (inception) through December 31, 2003 and the year ended December 31, 2004, respectively.

The Company also used the services of a Care employee and reimbursed Care for such personnel services related to occupancy and salary expenses incurred on behalf of the Company. Reimbursements related to such expenses were approximately $34,000 and approximately $49,000 for the period from March 13, 2003 (inception) through December 31, 2003 and the year ended December 31, 2004, respectively.

There were no related party transactions during 2005.

## 8. Preferred and common stock

### Series A preferred and common stock

In March 2003, the Company closed a private placement of its securities and raised approximately $10.0 million. The Company sold 10,000 shares of newly issued Class A Common Stock at a per share price of $0.40 and 10,000,000 shares of newly-issued Series A Preferred Stock at a per share price of $1.00 a share. Each preferred share is convertible into one share of the Company’s common stock, as adjusted. Each share of Series A Preferred Stock entitles the holder thereof to vote on the election and removal of the directors of the Company and on all other matters to be voted on by the stockholders of the Company. The holder of a share of Series A Preferred Stock shall be entitled to such number of votes as equal the number of shares of common stock into which such shares of Series A Preferred Stock is then convertible into at the record date of determination. The outstanding shares of Series A Preferred Stock have all other voting rights required by law and have additional rights pursuant to Article IV of the Company’s Second Restated Certificate of Incorporation.

In September 2004, the Board of Directors approved a 100-for-1 stock split on Common and Series A Preferred Stock. All share information in the financial statements has been retroactively adjusted to reflect the effect of the split as if it had occurred at the beginning of the earliest period presented.

### Series B Preferred Stock

In September 2004, the Company closed a private placement of 15,040,654 shares of Series B Preferred Stock for approximately $18.5 million.

In September 2005, the Company closed an additional private placement of 15,040,654 shares of Series B Preferred Stock for approximately $18.5 million.

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In December 2005, the Company closed an additional private placement of 12,195,129 shares of Series B Preferred Stock for approximately $15.0 million.

**Voting rights**

The holders of preferred stock shall vote together with the holders of the outstanding shares of common stock, and not as a separate class or series. So long as at least 10,528,457 shares of Series B Preferred Stock remain outstanding, the holders of the outstanding shares of Series B Preferred Stock, voting together as a class and to the exclusion of all other classes of capital stock of the Company, shall be entitled to elect three (3) members of the board of directors (the “Series B Preferred Directors”). So long as at least 3,500,000 shares of Series A Preferred Stock remain outstanding, the holders of the outstanding shares of Series A Preferred Stock, voting together as a class and to the exclusion of all other classes of capital stock of the Company, shall be entitled to elect three (3) members of the board of directors (the “Series A Preferred Directors” and, together with the Series B Preferred Directors, the “Preferred Directors”). Any remaining directors shall be appointed upon the mutual agreement of a majority of the Series A Preferred Directors and the Series B Preferred Directors (the “General Directors”), provided that one of the General Directors shall be the chief executive officer of the Company.

**Dividends**

The holder of each then outstanding share of Series A Preferred Stock and the holder of each then outstanding share of Series B Preferred Stock shall be entitled to receive dividends payable out of funds legally available therefore when, as and if declared by the board of directors of the Company. Such dividends shall be payable on parity with the holders of the common stock and any such dividend shall be distributed ratably among the holders of the common stock and the holders of the preferred stock as if all such shares of preferred stock were to convert into common stock. The right to such dividends shall not be cumulative, and no right shall accrue to holders of preferred stock. Dividends, if paid, or if declared and set apart for payment, must be paid, or declared and set apart for payment, on all outstanding shares of the preferred stock contemporaneously.

**Liquidation preference**

In the event of any voluntary or involuntary dissolution, liquidation or winding up of the affairs of the Company (a “Liquidation Event”), after payment or provision for payment of the debts and other liabilities of the Company, the holders of each share of Series A Preferred Stock and each share of Series B Preferred Stock shall be entitled to receive, on a pari passu basis out of the assets of the Company, an amount equal to the liquidation preference. The liquidation preference per share of Series A Preferred Stock as of any particular date (the “Series A Liquidation Preference”) shall be the greater of the Original Series A Purchase Price or the amount per share of Series A Preferred Stock that the holder of the number of shares of common stock issuable upon conversion thereof would receive upon any such Liquidation Event. The liquidation preference per share of Series B Preferred Stock as of any particular date (the “Series B Liquidation Preference” and, together with the Series A Liquidation Preference, the “Liquidation Preference”) shall be the

greater of the Original Series B Purchase Price or the amount per share of Series B Preferred Stock that the holder of the number of shares of common stock issuable upon conversion thereof would receive upon any such Liquidation Event.

If upon any Liquidation Event the assets of the Company distributable among the holders of the Series A Preferred Stock and the Series B Preferred Stock shall be insufficient to permit the payment to them of the full preferential amounts to which they are entitled, then the entire assets of the Company to be distributed shall be distributed ratably among the holders of the Series A Preferred Stock and the Series B Preferred Stock, in proportion to the sum of their respective per share liquidation preferences, until payment in full of such amount per share.

**Conversion**

Each share of the preferred stock shall be convertible, at the option of the holder, at any time after the date of the issuance of such share, into that number of the fully paid and nonassessable shares of common stock determined in accordance with the following provisions:

(a) Each share of Series A Preferred Stock shall be convertible into the number of shares of common stock which results from dividing the Series A Conversion Price (as defined herein) per share in effect at the time into the Original Series A Purchase Price; and

(b) Each share of Series B Preferred Stock shall be convertible into the number of shares of common stock which results from dividing the Series B Conversion Price (as defined herein) per share in effect at the time into the Original Series B Purchase Price.

The conversion price per share for the Series A Preferred Stock shall initially be $1.00. The conversion price per share for the Series B Preferred Stock shall initially be $1.23. The conversion price per share of both the Series A Preferred Stock and the Series B Preferred Stock shall be subject to equitable adjustment in the event of a stock split, stock combination, reclassification, reorganization, recapitalization or similar event, and shall also be subject to adjustment in the event that the Company issues shares of common stock (or securities convertible into or exercisable for common stock) at a price per share below the applicable conversion price then in effect (excluding shares issued or issuable to employees, officers, directors or consultants pursuant to agreements duly approved by the Company's board of directors, pursuant to exercises of warrants, options or other convertible securities outstanding as of September, 2004, or pursuant to certain lease financings).

**Automatic conversion**

Each share of preferred stock then outstanding shall be automatically converted into the number of fully paid and nonassessable shares of common stock determined in accordance with the conversion features listed above upon the earlier of:

(a) The close of business of the day immediately preceding the closing of the sale of its common stock in connection with a Qualified Public Offering ("IPO"); or

(b) The consent of the holders of at least a majority of the outstanding shares of preferred stock voting or consenting together as a single class and to the exclusion of all other classes of capital stock of the Company.

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**Special mandatory conversion**

In connection with the additional sale of Series B Preferred Stock in September 2005, if any holder of shares of Series B Preferred Stock fails to purchase all shares of Series B Preferred Stock required to be purchased by such holder at any additional closing (as defined), all of such holder's Series B Preferred Stock shall automatically and without further action on the part of such holder be converted into such number of shares of common stock into which such shares of Series B Preferred Stock are then convertible. Upon conversion, the shares of Series B Preferred Stock converted shall be canceled and not subject to reissuance.

## 9. Beneficial conversion feature— Series B convertible preferred stock

In September 2005, the Company completed the sale of an additional 15,040,654 shares of Series B Preferred Stock for proceeds of approximately $18.5 million. After evaluating the fair value of the Company's common stock obtainable upon conversion by the stockholders, the Company determined that the issuance of the Series B Preferred Stock sold in September 2005 resulted in a beneficial conversion feature calculated in accordance with EITF Issue No. 98-5, *Accounting for Convertible Securities with Beneficial Conversion Features or Contingently Adjustable Conversion Ratios*, ("EITF 98-5") as interpreted by EITF Issue No. 00-27, *Application of Issue No. 98-5 to Certain Convertible Instruments*, ("EITF 00-27") of approximately $18.5 million which was fully accreted in September 2005 and is recorded as a deemed dividend to preferred stockholders for the year ended December 31, 2005.

In December 2005, the Company closed an additional private placement of 12,195,129 shares of Series B Preferred Stock for proceeds of approximately $15.0 million. The Company evaluated the fair value of the Company's common stock obtainable upon conversion by the stockholders using EITF 98-5 and EITF 00-27 and determined that the issuance of the Series B Preferred Stock sold in December 2005 resulted in a beneficial conversion feature of approximately $15.0 million that was fully accreted in December 2005 and recorded as a deemed dividend to preferred stockholders for the year ended December 31, 2005.

## 10. Management equity plan

In March 2003, the Company adopted the Vanda Pharmaceuticals Inc. Management Equity Plan ("Stock Option Plan"), a non-qualified stock option plan. The Company has reserved 5,896,359 shares of common stock to accommodate the exercise of options granted under the Stock Option Plan. As of December 31, 2005, there were a remaining 506,367 shares reserved for issuance under the Stock Option Plan. The Company has issued options to purchase common stock to various employees which expire 10 years from the date of grant. The options become 100% vested on the fourth anniversary of the date of grant.

**Management equity plan**

The Company has historically granted stock options at exercise prices that equaled the fair value of its common stock at the date of grant as estimated by its board of directors. Since there has

not been a public market for the Company's common stock, the board of directors determined the fair value of its common stock by considering a number of objective and subjective factors, including the pricing of convertible preferred stock, the preferences and rights of the Company's preferred stock over the common stock, important operational events, the risk and non-liquid nature of the common stock, and underlying market conditions. The Company has not historically obtained contemporaneous valuations by an unrelated valuation specialist because, at the time of the issuances of stock options, the Company believed its estimates of the fair value of its common stock to be reasonable based on the foregoing factors.

In connection with this proposed initial public offering, the Company retrospectively assessed the fair value of its common stock. In reassessing the fair value, the Company considered the factors used in its historical determinations of fair value, the likelihood of a liquidity event such as an initial public offering, and feedback received from investment banks relating to an initial public offering upon beginning such discussions in November 2005. In reassessing the fair value of the common stock, the Company determined that an increase in the estimated fair value of the underlying common stock for options granted after December 2003 was appropriate. As allowed by SFAS No. 123, *Accounting for Stock Based Compensation*, the Company accounts for its stock options granted to employees and directors under APB 25, *Accounting for Stock Issued to Employees*. Accordingly, deferred stock compensation is recognized to the extent that the price of the underlying common stock, as determined in the retrospective fair value analysis, exceeds the exercise price of the stock options at the date of grant. Deferred stock compensation is amortized over the vesting period of the related options which is generally four years.

For the year ended December 31, 2004, the Company granted 332,080 stock options to employees with a weighted average intrinsic value of $0.85 per share, resulting in deferred stock compensation of $281,130. For the year ended December 31, 2005, the Company granted 4,364,874 stock options to employees with a weighted average intrinsic value of $4.34 per share, resulting in deferred stock compensation of $18,788,385. Compensation expense relating to stock options with the common stock fair value greater than the exercise price granted to employees was $23,196 and $1,276,021 for the years ended December 31, 2004 and 2005, respectively. Of the $23,196 of compensation expense recognized during the year ended December 31, 2004, $2,086 was included in research and development and $21,110 was included in general and administrative. Of the $1,276,021 of compensation expense recognized during the year ended December 31, 2005, $152,971 was included in research and development and $1,123,050 was included in general and administrative expense.

In August 2004, the Company approved a modification to an employee's stock option awards at time of employment termination. The modification was to accelerate a portion of the unvested stock options so the shares could be immediately exercisable. According to FASB Interpretation No. 44, *Accounting for Certain Transactions Involving Stock Compensation* (FIN 44), the result of such a modification is to remeasure the stock options that were modified. The remeasurement of the stock options resulted in an immediate charge of $14,937, which was included in general and administrative expense for the year ended December 31, 2004.

# Vanda Pharmaceuticals Inc.
## (A development stage company)
## Notes to consolidated financial statements—(continued)
### December 31, 2004 and 2005

In February 2005, the board of directors approved a modification to all outstanding granted stock option awards, repricing the options from its original exercise price of $0.40 to $0.10. According to FIN 44, the result of such a modification is to account for the modified stock option awards as variable from the date of the modification to the date the awards are exercised, forfeited, or cancelled. For each of the quarters ended during the year ended December 31, 2005, the Company remeasured approximately 1.1 million outstanding stock options, resulting in a deferred stock compensation of $1,702,625 at December 31, 2005. Compensation expense relating to the remeasurement of modified stock options was $3,826,157 for the year ended December 31, 2005, which includes $3,119,676 of immediate stock compensation charges for vested shares at the time of remeasurement. Of the $3,826,157 of compensation expense recognized during the year ended December 31, 2005, $635,906 was included in research and development and $3,190,251 was included in general and administrative expense.

A summary of stock option activity is as follows with the repricing the options from its original exercise price of $0.40 to $0.10 reflected for all option activity:

| | Number of shares | Weighted average exercise price at grant date |
|---|---|---|
| March 13, 2003 (inception) | — | $ — |
| Granted | 772,100 | 0.10 |
| Outstanding at December 31, 2003 | 772,100 | 0.10 |
| Granted | 332,080 | 0.10 |
| Cancelled or expired | (61,700) | 0.10 |
| Outstanding at December 31, 2004 | 1,042,480 | 0.10 |
| Granted | 4,364,874 | 0.46 |
| Cancelled or expired | (17,362) | 0.10 |
| Exercised | (317,535) | 0.10 |
| Outstanding at December 31, 2005 | 5,072,457 | 0.42 |
| Exercisable at December 31, 2005 | 438,255 | 0.10 |

# Vanda Pharmaceuticals Inc.
## (A development stage company)
## Notes to consolidated financial statements—(continued)
### December 31, 2004 and 2005

The following table summarizes information about stock options outstanding and exercisable at December 31, 2005:

| | Options outstanding | | | Options exercisable | |
|---|---|---|---|---|---|
| Exercise price | Number of underlying shares | Weighted-average exercise price per share | Weighted-average remaining contractual life (years) | Number of underlying shares | Weighted-average exercise price per share |
| $0.10 | 3,609,693 | $ 0.10 | 9.2 | 438,255 | $ 0.10 |
| $0.25 | 275,000 | $ 0.25 | 9.9 | — | — |
| $1.43 | 1,187,764 | $ 1.43 | 10.0 | — | — |
| | 5,072,457 | | | 438,255 | |

**Restricted stock**

Certain of the Company's employees have entered into the Company's standard form of stock restriction agreement as a condition to their exercise of options to acquire common stock pursuant to the Plan. Shares exercised prior to vesting are subject to forfeiture in accordance with the vesting schedule of the granted stock options. During 2005, certain of the Company's employees exercised unvested stock options, awarded under the Company's Stock Incentive Plan, to acquire a total of 191,578 shares of restricted common stock. At December 31, 2005, 183,277 shares of restricted common stock remain unvested pursuant to awards.

## 11. Stock warrants

In 2003, in connection with entering into the line of credit facility to finance the purchase of equipment, the Company granted to the lender a freely exercisable warrant to purchase 45,100 shares of the Company's common stock (the "Lender Warrant Shares") at an exercise price of $0.40 per share. The Lender Warrant Shares were valued using the Black-Scholes option pricing model at $0.28 per share and the aggregate value was $12,628, which was recorded as general and administrative for the period from March 13, 2003 through December 31, 2003.

In February 2004, the Company issued warrants to a consultant to purchase 121,500 shares of the Company's common stock (the "Consultant Warrant Shares") at an exercise price of $0.40 per share. The Consultant Warrant Shares were valued using the Black-Scholes option pricing model at $0.23 per Consultant Warrant Share and the aggregate value was $27,945, which was recorded as general and administrative for the year ended December 31, 2004.

# Vanda Pharmaceuticals Inc.
## (A development stage company)
## Notes to consolidated financial statements—(continued)
### December 31, 2004 and 2005

The Company used the following assumptions to calculate the individual warrant shares through the Black-Scholes option pricing model:

| | Lender | Consultant |
|---|---|---|
| Expected dividend yield | 0% | 0% |
| Expected volatility | 67% | 67% |
| Expected term (years) | 8 | 5 |
| Risk-free interest rate | 3.65% | 3.08% |

## 12. Income taxes

The tax provision is as follows:

| | Period from March 13, 2003 (inception) to December 31, 2003 | December 31, 2004 | December 31, 2005 |
|---|---|---|---|
| Current federal tax expense | $ — | $ — | $ — |
| Current state tax expense | — | — | — |
| Current foreign expense | — | 4,949 | 7,649 |
| Deferred tax expense | — | — | — |
| | — | — | — |
| Total tax expense | $ — | $ 4,949 | $ 7,649 |

Deferred tax assets consist of the following:

| | December 31, 2004 | December 31, 2005 |
|---|---|---|
| **Deferred Tax Asset (Liability)** | | |
| Net operating loss carryforwards | $ 3,863,758 | $ 8,340,222 |
| Start-up costs | 869,656 | 3,717,820 |
| Stock-based compensation | — | 1,683,454 |
| Research and development credit | 365,134 | 769,019 |
| Depreciation and amortization | (52,549) | (57,340) |
| Amortization of warrants | 26,878 | 12,156 |
| Accrued and deferred expenses | 74,870 | 19,359 |
| Net deferred tax assets | 5,147,747 | 14,484,690 |
| Deferred tax asset valuation allowance | (5,147,747) | (14,484,690) |
| | $ — | $ — |

Based on the Company's limited operating history and management's expectation of future profitability, management believes that the Company's deferred tax assets do not meet the

"more likely than not" criteria under SFAS No. 109. Accordingly, a valuation allowance for the entire deferred tax asset amount has been recorded.

The effective tax rate differs from the U.S. federal statutory tax rate of 34% due to the following:

| | December 31, | |
|---|---|---|
| | 2004 | 2005 |
| Federal tax at statutory rate | 34.0% | 34.0% |
| State taxes | 4.6% | 4.5% |
| Change in valuation allowance | (42.5%) | (39.1%) |
| Research and development credit | 4.0% | 1.7% |
| Meals, entertainment and other nondeductable items | (0.1%) | (1.1%) |
| Effective tax rate | 0.0% | 0.0% |

At December 31, 2004 and 2005, the Company had U.S. federal and state net operating loss carryforwards of approximately $10.0 million and $21.6 million, respectively available to reduce future taxable income, which will begin to expire in 2023. At December 31, 2004 and 2005, the Company had approximately $0.4 million and $0.8 million of research and development credit, respectively which will begin to expire in 2023.

Under the Tax Reform Act of 1986, the amounts of and benefits from the operating loss carryforwards may be impaired in certain circumstances. Events which cause limitations in the amount of net operating losses that the Company may utilize in any one year include, but are not limited to, a cumulative ownership change of more than 50%, as defined, over a three year period.

## 13. Employee benefit plan

The Company has a defined contribution plan (the Plan) under the Internal Revenue Code Section 401(k). This plan covers substantially all employees who meet minimum age and service requirements and allows participants to defer a portion of their annual compensation on a pre-tax basis. Currently, the Company matches 50 percent up to the first six percent of employee contributions. All matching contributions have been paid by the Company. The employer match vests over a 4 year period. The total employer match for the period from March 13, 2003 (inception) through December 31, 2003 and for the years ended December 31, 2004 and 2005 was $12,731, $42,206 and $55,503, respectively.

## 14. Subsequent event

When the Company took possession of the new lease space in January 2006, the Company vacated the current office and laboratory space. According to SFAS 146 *Accounting for Costs Associated with Exit or Disposal Activities*, a liability for costs that will continue to be incurred under a contract for its remaining term without economic benefit to the Company shall be recognized and measured when the Company ceases using the right conveyed by the lease agreement, reduced by estimated sublease rentals that could be reasonably obtained. The Company incurred a charge of approximately $260,000 at the time the Company moved from the current location to the new office complex in January 2006.

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***shares***


***Common shares***

# Prospectus

**JPMorgan** **Banc of America Securities LLC**

**Thomas Weisel Partners LLC**

, 2006

**You should rely only on the information contained in this prospectus. We have not authorized anyone to provide you with information different from that contained in this prospectus. We are offering to sell, and seeking offers to buy, common shares 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 our common shares.**

**No action is being taken in any jurisdiction outside the United States to permit a public offering of the common shares or possession or distribution of this prospectus in that jurisdiction. Persons who come into possession of this prospectus in jurisdictions outside the United States are required to inform themselves about and to observe any restrictions as to this offering and the distribution of this prospectus applicable to that jurisdiction.**

**Until , 2006 all dealers that buy, sell or trade in our common shares, whether or not participating in this offering, may be required to deliver a prospectus. This is in addition to the dealers' obligation to deliver a prospectus when acting as underwriters and with respect to their unsold allotments or subscriptions.**

# Part II
# information not required in prospectus

## Item 13. *Other expenses of issuance and distribution.*

Estimated expenses payable in connection with the sale of the common stock in this offering are as follows:

| | | |
|---|---|---|
| SEC registration fee | $ | 8,025.00 |
| NASD filing fee | $ | 8,000.00 |
| Nasdaq National Market listing fee | $ | 5,000.00 |
| Printing and engraving expenses | $ | * |
| Legal fees and expenses | $ | * |
| Accounting fees and expenses | $ | * |
| Transfer agent and registrar fees and expenses | $ | * |
| Miscellaneous | $ | * |
| Total | $ | * |

* To be completed by amendment.

The registrant will bear all of the expenses shown above.

## Item 14. *Indemnification of directors and officers.*

The Delaware General Corporation Law and the registrant's charter and bylaws provide for indemnification of the registrant's directors and officers for liabilities and expenses that they may incur in such capacities. In general, directors and officers are indemnified with respect to actions taken in good faith in a manner reasonably believed to be in, or not opposed to, the best interests of the registrant, and with respect to any criminal action or proceeding, actions that the indemnitee had no reasonable cause to believe were unlawful. Reference is made to the registrant's amended and restated certificate of incorporation filed as Exhibit 3.2 hereto and the registrant's bylaws filed as Exhibit 3.3 hereto.

The registrant has entered into indemnification agreements with its officers and directors, a form of which is attached as Exhibit 10.11 hereto and incorporated herein by reference. The Indemnification Agreements provide the registrant's officers and directors with further indemnification to the maximum extent permitted by the Delaware General Corporation Law. The underwriting agreement provides that the underwriters are obligated, under certain circumstances, to indemnify directors, officers and controlling persons of the registrant against certain liabilities, including liabilities under the Securities Act. Reference is made to the form of underwriting agreement filed as Exhibit 1.1 hereto.

The registrant currently maintains a directors' and officers' liability insurance policy.

## Item 15. *Recent sales of unregistered securities.*

In the three years preceding the filing of this registration statement, the registrant has sold the following securities that were not registered under the Securities Act:

**Common stock**

In March 2003, the company issued a total of 100 shares of its Series A common stock to three accredited investors at an aggregate purchase price of $4,000. These shares were subsequently converted into a total of 10,000 shares of common stock.

In April 2005, the company issued a total of 1,838 shares of its common stock to employees, officers and directors upon exercises of options granted pursuant to its Second Amended and Restated Management Equity Plan, for an aggregate purchase price of $183.80.

In June 2005, the company issued a total of 61,700 shares of its common stock to employees, officers and directors upon exercises of options granted pursuant to its Second Amended and Restated Management Equity Plan, for an aggregate purchase price of $6,170.00.

In August 2005, the company issued a total of 3,700 shares of its common stock to employees, officers and directors upon exercises of options granted pursuant to its Second Amended and Restated Management Equity Plan, for an aggregate purchase price of $370.00.

In September 2005, the company issued a total of 73,501 shares of its common stock to employees, officers and directors upon exercises of options granted pursuant to its Second Amended and Restated Management Equity Plan, for an aggregate purchase price of $7,350.10.

In October 2005, the company issued a total of 133,796 shares of its common stock to employees, officers and directors upon exercises of options granted pursuant to its Second Amended and Restated Management Equity Plan, for an aggregate purchase price of $13,379.60.

In November 2005, the company issued a total of 43,000 shares of its common stock to employees, officers and directors upon exercises of options granted pursuant to its Second Amended and Restated Management Equity Plan, for an aggregate purchase price of $4,300.

No underwriters were involved in the foregoing sales of securities. Such sales were made in reliance upon the exemption provided by Section 4(2) of the Securities Act for transactions not involving a public offering.

**Series A Preferred Stock**

In March 2003, the company sold an aggregate of 10,000,000 shares of its Series A Preferred Stock (giving effect to a 100 for 1 stock split occurring after such sale) to three accredited investors at an aggregate purchase price of $10,000,000.

No underwriters were involved in the foregoing sales of securities. Such sales were made in reliance upon the exemption provided by Section 4(2) of the Securities Act for transactions not involving a public offering.

**Series B Preferred Stock**

In September 2004, the company sold an aggregate of 15,040,654 shares of its Series B Preferred Stock to twelve accredited investors at an aggregate purchase price of $18,500,004.42.

In September 2005, the company sold an aggregate of 15,040,654 shares of its Series B Preferred Stock to twelve accredited investors at an aggregate purchase price of $18,500,004.42.

In December 2005, the company sold an aggregate of 12,195,129 shares of its Series B Preferred Stock to twelve accredited investors at an aggregate purchase price of $15,000,008.67.

No underwriters were involved in the foregoing sales of securities. Such sales were made in reliance upon the exemption provided by Section 4(2) of the Securities Act for transactions not involving a public offering.

**Options**

The Company has granted currently outstanding options to purchase an aggregate of 5,026,123 shares, at prices ranging from $0.10 to $1.43. These options have been granted to employees, directors and consultants in accordance with the terms of the registrant's equity compensation plans. Such issuances were made in reliance upon the exemption provided by Rule 701 promulgated under the Securities Act and, in the case of certain consultants, Section 4(2) of the Securities Act.

**Warrants**

In October 2003, the company granted a warrant to purchase 451 shares of its Class A Common Stock which, with the subsequent conversion of Class A Common Stock to the company's common stock, has become exercisable for 45,100 shares of the company's common stock.

In February 2004, the company granted a warrant to purchase 1,215 shares of its Class A Common Stock which, with the subsequent conversion of Class A Common Stock to the company's common stock, has become exercisable for 121,500 shares of the company's common stock.

No underwriters were involved in the foregoing sales of securities. Such sales were made in reliance upon the exemption provided by Section 4(2) of the Securities Act for transactions not involving a public offering.

## Item 16. *Exhibits and financial statement schedules.*

(a) *Exhibits:*

# Exhibit index

| Exhibit no. | Exhibit index |
|---|---|
| 1.1** | Form of Underwriting Agreement |
| 3.1* | Second Restated Certificate of Incorporation of the registrant |
| 3.2* | Certificate of Amendment of the Second Restated Certificate of Incorporation of the registrant dated March 22, 2005 |
| 3.3* | Certificate of Amendment of the Second Restated Certificate of Incorporation of the registrant dated December 9, 2005 |
| 3.4** | Form of Amended and Restated Certificate of Incorporation of the registrant effecting a conversion of preferred stock and reverse stock split to take effect as of the closing of the offering |
| 3.5* | Bylaws of the registrant |
| 3.6** | Form of Amended and Restated Bylaws to take effect as of the closing of the offering |
| 4.1* | 2004 Securityholder Agreement |
| 4.2* | Class A Common Stock Purchase Warrant dated February 20, 2004 issued to Investment Opportunities I, LLC |
| 4.3* | Class A Common Stock Purchase Warrant dated October 28, 2003 issued to Oxford Finance Corporation |
| 4.4** | Specimen certificate representing the common stock of the registrant |
| 5.1** | Opinion of Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP |
| 10.1* | Registrant's Second Amended and Restated Management Equity Plan |
| 10.2# | Sublicense Agreement between the registrant and Novartis Pharma AG dated June 4, 2004 (relating to iloperidone) |
| 10.3# | Amended and Restated License, Development and Commercialization Agreement by and between Bristol-Myers Squibb Company and the registrant dated July 24, 2005 (relating to VEC-162) |
| 10.4# | NDD-094 License Agreement between Novartis Pharma AG, Novartis AG and the registrant dated June 4, 2004 (relating to VSF-173) |
| 10.5 | [Omitted.] |
| 10.6 | [Omitted.] |
| 10.7* | Lease Agreement between the registrant and Red Gate III LLC dated June 25, 2003 (lease of Rockville, MD office space) |
| 10.8* | Amendment to Lease Agreement between the registrant and Red Gate III LLC dated September 27, 2003 |
| 10.9* | Lease Agreement between the registrant and MCC3 LLC (by Spaulding and Slye LLC) dated August 4, 2005 (for lease of space beginning January 1, 2006) |
| 10.10* | Summary Plan Description provided for the registrant's 401(k) Profit Sharing Plan & Trust |
| 10.11* | Form of Indemnification Agreement entered into by directors |
| 10.12* | Employment Agreement for Mihael H. Polymeropoulos dated February 10, 2005 |
| 10.13* | Employment Agreement for William D. Clark dated February 10, 2005 |
| 10.14* | Employment Agreement for Steve Shallcross dated October 18, 2005 |
| 10.15* | Employment Agreement for Deepak Phadke dated August 15, 2005 |
| 10.16* | Employment Agreement for Thomas Copmann dated May 27, 2005 |
| 21.1* | List of Subsidiaries |

| Exhibit no. | Exhibit index |
|---|---|
| 23.1** | Consent of Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP (included in Exhibit 5.1) |
| 23.2 | Consent of PricewaterhouseCoopers LLP, Independent Registered Public Accounting Firm |
| 23.3 | Consent of LEK Consulting |
| 24.1* | Power of Attorney (included on page II-6) |

* Previously Filed

** To be included by amendment

# Application has been made to the Securities and Exchange Commission to seek confidential treatment of certain provisions. Omitted material for which confidential treatment has been requested has been filed separately with the Securities and Exchange Commission.

(b) *Consolidated Financial Statements Schedules*:

All schedules for which provision is made in the applicable accounting regulations of the Securities and Exchange Commission are not required under the related instructions, the required information is disclosed in the notes to the consolidated financial statements or the schedules are inapplicable, and therefore have been omitted.

## Item 17. *Undertakings.*

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to provisions described in Item 14 above, 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 Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

The registrant hereby undertakes (1) 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; (2) that for purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in the 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; and (3) that for the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

# Signatures

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this Amendment No. 1 to the registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in Rockville, Maryland on February 16, 2006.

VANDA PHARMACEUTICALS INC.

By: /s/ MIHAEL H. POLYMEROPOULOS, M.D.
Mihael H. Polymeropoulos, M.D.
*Chief Executive Officer*

# Signatures

Pursuant to the requirements of the Securities Act of 1933, this Amendment No. 1 to the registration statement has been signed below by the following persons in the capacities and on the dates indicated.

| Name | Title | Date |
|---|---|---|
| /s/ MIHAEL H. POLYMEROPOULOS, M.D.<br>Mihael H. Polymeropoulos, M.D. | President and Chief Executive Officer and Director (principal executive officer) | February 16, 2006 |
| /s/ STEVEN A. SHALLCROSS<br>Steven A. Shallcross | Senior Vice President, Chief Financial Officer and Treasurer (principal financial and accounting officer) | February 16, 2006 |
| *<br>Argeris N. Karabelas, Ph.D. | Director | February 16, 2006 |
| *<br>Brian K. Halak, Ph.D. | Director | February 16, 2006 |
| *<br>Wayne T. Hockmeyer, Ph.D. | Director | February 16, 2006 |
| *<br>David Ramsay | Director | February 16, 2006 |

| Name | Title | Date |
|---|---|---|
| * | Director | February 16, 2006 |
| James B. Tananbaum, M.D. | | |
| * | Director | February 16, 2006 |
| Richard W. Dugan | | |
| *By: /s/ Mihael H. Polymeropoulos, M.D. | | |
| Mihael H. Polymeropoulos, M.D.<br>*Attorney-in-Fact* | | |

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| 10.11* | Form of Indemnification Agreement entered into by directors |
| 10.12* | Employment Agreement for Mihael H. Polymeropoulos dated February 10, 2005 |
| 10.13* | Employment Agreement for William D. Clark dated February 10, 2005 |
| 10.14* | Employment Agreement for Steve Shallcross dated October 18, 2005 |
| 10.15* | Employment Agreement for Deepak Phadke dated August 15, 2005 |
| 10.16* | Employment Agreement for Thomas Copmann dated May 27, 2005 |
| 21.1* | List of Subsidiaries |

| Exhibit no. | Exhibit index |
|---|---|
| 23.1** | Consent of Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP (included in Exhibit 5.1) |
| 23.2 | Consent of PricewaterhouseCoopers LLP, Independent Registered Public Accounting Firm |
| 23.3 | Consent of LEK Consulting |
| 24.1* | Power of Attorney (included on page II-6) |

* Previously filed

** To be included by amendment

# Application has been made to the Securities and Exchange Commission to seek confidential treatment of certain provisions. Omitted material for which confidential treatment has been requested has been filed separately with the Securities and Exchange Commission.

Exhibit 10.2

# SUBLICENSE AGREEMENT

between

Novartis Pharma AG

and

Vanda Pharmaceuticals, Inc.

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[*] CERTAIN INFORMATION IN THIS EXHIBIT HAS BEEN OMITTED AND FILED SEPARATELY WITH THE COMMISSION. CONFIDENTIAL TREATMENT HAS BEEN REQUESTED WITH RESPECT TO THE OMITTED PORTIONS.

SUBLICENSE AGREEMENT

THIS SUBLICENSE AGREEMENT effective as of the 4th day of June, 2004, ("Effective Date") between Vanda Pharmaceuticals, Inc., a corporation organized and existing under the laws of the State of Delaware and having its principal office at 47 Hulfish Street, Suite 310, Princeton, NJ 08542, The United States ("Vanda") and Novartis Pharma AG, a corporation organized under the laws of Switzerland and having its principal office at Lichtstrasse 35, CH-4056 Basel, Switzerland ("Novartis")

WITNESSETH THAT:

WHEREAS Novartis is the exclusive worldwide licensee of Titan Pharmaceuticals, Inc. ("Titan") under a sublicense agreement between Novartis and Titan having an Effective Date of 20th November, 1997 and as amended by two Amendments between the parties dated 30th November 1998 and 10th April, 2001 (the "Titan Agreement"); and

WHEREAS Titan is the exclusive worldwide licensee of Hoechst Marion Roussel Inc. ("HMRI") under a license agreement between Titan and HMRI having an Effective Date of 31st December, 1996 (the "HMRI Agreement"); and

WHEREAS as a result of corporate restructuring, Aventis Pharmaceuticals Inc., a corporation organized under the laws of the State of Delaware and with offices at 200 Crossing Boulevard, Bridgewater, NJ 08807-0890 ("Aventis") acquired substantially all of the tangible operating assets of HMRI and, as a result, the HMRI Agreement has been assigned to Aventis; and

WHEREAS under such Titan Agreement and the Novartis Patents, Novartis has rights with respect to certain patents and patent applications, identified in Appendix A hereto, and know-how relating to a compound known as Iloperidone; and

WHEREAS Vanda desires to obtain certain exclusive licenses from Novartis under the Titan Agreement and the Novartis Patents, and Novartis is willing to grant to Vanda such licenses;

NOW, THEREFORE, in consideration of the covenants and obligations expressed herein, and intending to be legally bound, the parties agree as follows:

1. DEFINITIONS

1.1 "Affiliate" shall mean any corporation, firm, partnership or other entity, whether de jure or de facto, which directly or indirectly owns, is owned by or is under common ownership with a party to this Sublicense Agreement, to the extent of more than fifty percent (50%) of the equity (or such lesser percentage which is the maximum allowed to be owned by a foreign corporation in a particular jurisdiction) having the power to direct the affairs of the entity and any person, firm, partnership, corporation or other entity actually controlled by, controlling or under common control with a party to this Sublicense Agreement.

1.2 "Commercially Reasonable Efforts "shall mean efforts and resources [*] used [*] for a product [*], taking into account the [*] marketplace, the [*], and [*].

1.3 "Competitive Industry Standard Level" shall mean the level to which the Product shall be marketed by or on behalf of Vanda, its Affiliates or Sublicensees in the countries of the Territory where Patents are issued and enforced with [*], in a manner [*].

1.4 "Compound" shall mean the chemical compound known as Iloperidone [*], including any salts, hydrates, solvates, and/or stereoisomers thereof, and only the metabolites listed in Appendix B hereto, including any salts, hydrates, solvates and/or stereoisomers of such metabolites.

1.5 "EEA" shall mean the European Economic Area, which consists of the European Union and Iceland, Liechtenstein and Norway.

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1.6 "European Union" shall mean the member states of the European Union, as may exist from time to time, which as of the date hereof include Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom and all other countries which accede to the European Union during the term of this Sublicense Agreement.

1.7 "Exclusive" shall have the meaning specified in Section 2.1 hereof.

1.8 "FDA" shall mean the United States Food and Drug Administration.

1.9 "FD&C Act" shall mean the Federal Food, Drug and Cosmetic Act (21 U.S.C. 301ff), as amended from time to time.

1.10 "Field" shall mean application to all conditions, disorders and diseases in humans.

1.11 "IND" shall mean an Investigational New Drug Application.

1.12 "Know-How" shall mean all technical information and know-how: (a) presently developed and owned or controlled by HMRI or Titan and their Affiliates and made available to Novartis, (b) developed and owned or controlled by Novartis and its Affiliates after the date of the Titan Agreement, and (c) developed and owned or controlled by HMRI, Titan or Novartis and their respective Affiliates, after the date hereof and included within this definition of "Know-How" by operation of Section 2.3 hereof, which relates to the Compound or Product in the Field and which constitutes a proprietary "trade secret" or other valid intellectual property right under U.S. or other applicable law which is substantial, secret and identifiable, including, without limitation, all biological, chemical, pharmacological, toxicological, clinical, regulatory, analytical, quality control and manufacturing data and any other information (whether technical or commercial) relating to the Compound or Product that may be useful for the development, regulatory approval, manufacture and commercialization of the Compound or Product.

1.13 "Major Market Country" shall mean each of [*].

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1.14 "NDA" shall mean any and all applications (new drug applications) submitted to the FDA under Sections 505, 507 or 512 of the FD&C Act and applicable regulations related to the Product, including without limitation, full NDAs, "paper" NDAs and abbreviated NDAs (ANDAs) and all amendments and supplements thereto or equivalent applications in the European Union.

1.15 "Net Sales" shall be calculated as follows: From the [*] price of the Product sold by Vanda or its Affiliates or Sub-licensees [*] there shall be subtracted, if not previously deducted in the amount invoiced or received, (i) [*], (ii) [*], (iii) [*], (iv) [*], (v) [*], (vi) [*] and (vii) [*]. The computation of Net Sales shall not include [*]. For the purposes of this Sublicense Agreement, sales of the Product to [*] are considered to be sales to third parties. If the Product is sold [*], royalties shall be due on Net Sales to third parties [*]. It is agreed that there shall be [*]. In the event there are sales of Compound to Third Parties [*] such sales shall be [*].
In the event that the Product is sold as part of a combination product, the Net Sales of the Product, for the purposes of determining royalty payments, shall be determined by

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[*] the Net Sales (as defined above in this Section) of [*]. In the event that such [*] cannot be determined for both Product and the other product(s) in combination, Net Sales for purposes of determining royalty payments shall be mutually agreed by the parties within a reasonable period of time prior to the first commercial sale of such combination product based on all relevant factors including [*], and such agreement shall not be unreasonably withheld.

1.16 "Patents" shall mean all patents and patent applications set forth in Appendix A, including continuations, continuations-in-part, divisions, patents of addition, reissues, re-examinations, renewals or extensions thereof, along with supplementary protection certificates and other administrative protection of any kind in the Territory owned by or licensed to Novartis or its Affiliates to the extent that such patents claim the Compound or Product, or use, formulations or manufacture thereof, for use in the Field, but not any other compound or use outside of the Field disclosed or claimed in those patents or patent applications. Any Patent having claims covering the Compound or Product or its use formulation and manufacture thereof for use in the Field which is issued during the term of this Sublicense Agreement in any Country of the Territory shall automatically be deemed as of the date of such issuance to be included in the Patent, as defined hereunder.

1.17 "Product" shall mean any bulk or finished pharmaceutical composition containing the Compound as a pharmaceutically active ingredient for use in the Field, whether as a sole active ingredient or in combination with another active ingredient.

1.18 "SEC" shall mean the United States Securities and Exchange Commission.

1.19 "Sub-licensee" shall mean a Third Party (as defined below) to whom a party sub-licenses rights to manufacture and sell (or have manufactured and sold) the Compound under Patents, but shall not include any Third Parties to whom rights to manufacture the Compound have not been granted. Unless such party grants to such Third Party the right to manufacture Compound, the following Third Parties shall not be considered Sublicensees under this Sublicense Agreement: agents, distributors, wholesalers, subcontractors, co-

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promoters, partners or joint venturers. Sub-licensees shall not include compulsory licensees as described in Section 4.1(a).

1.20 "Territory" shall mean all countries and territories of the world provided that any country(ies) in which this Sublicense Agreement is terminated shall be removed from the scope of this definition.

1.21 "Third Party" shall mean any party other than a party to this Sublicense Agreement, HMRI, Titan or an Affiliate of any of these.

2. GRANT

2.1 Novartis hereby grants to Vanda an Exclusive sublicense in the Field under the Patents (to the extent, but only to the extent, that such patents or patent applications claim the Compound or Product or the manufacture, formulation, or use thereof) and Know-How to develop, have developed, make, have made, use, import, sell, offer for sale and have sold the Compound and Product in the Territory, subject to the terms and conditions of this Sub-license Agreement. All rights granted by Novartis to Vanda in this Sublicense Agreement shall remain subject to the rights and obligations of HMRI and Titan within the HMRI Agreement. The sublicense granted to Vanda by Novartis shall include the right of Vanda to sublicense its rights under this Sublicense Agreement, but only upon Novartis', HMRI's and Titan's prior written consent, which consent shall not be unreasonably withheld. Any such sublicensee(s) shall impose upon a Sublicencee(s) of Vanda substantially the same terms and conditions as Vanda assumes in this Sublicense Agreement. As used in this Sublicense Agreement, the term "Exclusive" shall mean that neither Novartis, nor its Affiliates shall grant any other license to, nor themselves exploit, the Patents and Know-How with respect to the Compound and Product in the Field (unless otherwise specified herein) and be limited as follows:
(a) With respect to all geographic areas outside of the EEA, such sublicense shall be exclusive for the duration and validity of the intellectual property rights constituting the Patents and/or Know-How.
(b) With respect to all geographic areas within the EEA, such sublicense shall be exclusive for the following time periods:

(i) For each of the countries within the EEA where only Patents (and not Know-How) exist and are sublicensed to Vanda hereunder, the period of exclusivity for each such country shall be limited to the duration of the relevant Patents in such country, provided that "Patents" for the purposes of the interpretation of this paragraph shall be limited to patents existing, and patents issuing from patent applications existing, and patents issuing from patent applications covering inventions existing as of the date of the Titan Agreement;
(ii) For each of the countries within the EEA where Patents and Know-How exist and are sublicensed to Vanda hereunder, the period of exclusivity for each such country shall be limited to the duration of the relevant Patents in such Country, provided that "Patents" for purposes of the interpretation of this paragraph shall be limited to patents existing, and patents issuing from patent applications existing, as of the date of the Titan Agreement and, provided, further, that if the duration of such Patents is less than ten (10) years from the date of first marketing of the Product in the EEA but the Know-How continues to be sublicensed hereunder, the duration of exclusivity shall be for ten (10) years from the date of first marketing of the Product in the EEA; and
(iii) For each of the countries within the EEA where Know-How (and not Patents) exists and is sublicensed to Vanda hereunder, the period of exclusivity for each such country shall be limited to ten (10) years from the date of first marketing of the Product in the EEA. Thereafter, such sublicense within the EEA shall be on a non-exclusive basis.

(c) deleted

(d) Novartis and its Affiliates and licensed Third Parties and Sub-licensees shall also be entitled to utilise the Patents and Know-How in the Field within the Territory for the development and manufacture of the Compound and Product for marketing, distribution and sale where Vanda's rights under this Sublicense Agreement have been terminated. The duration of the sublicense granted by this Section 2.1 shall be limited to the duration, on a country-by-country basis, of the intellectual property rights which comprise the Patents and Know-How with respect to a relevant country, provided that the termination of any portion of any sublicense shall be without prejudice to the requirement of Vanda to pay royalties pursuant to the terms of this Sublicense Agreement. Notwithstanding the foregoing but subject to Sections 3.4 and 3.5 hereof, Novartis acknowledges and agrees that Vanda shall have the right to continue to use on a royalty-free, non-exclusive basis the information which

constitutes the Patents and Know-How on a country-by-country basis in the Territory for the Field after the Patents expire or cease to be valid or enforceable and/or Know-How has entered into the public domain.

2.2 deleted

2.3 deleted.

2.4 Novartis grants to Vanda a non-exclusive, worldwide sublicense to make or use any analytical reference standards, intermediate or metabolite of the Compound or Product not listed in APPENDIX B hereto which may be claimed in Patents limited solely to making or using the Compound or Product. [*]. Any such sublicense shall [*].

2.5 Vanda shall promote, market and sell the Product under a registered trademark(s) approved by HMRI, Titan and Novartis. Vanda will promptly inform HMRI, Titan and Novartis of the selected trademark(s) and each of the three parties will have [*] in which to either approve or reject the selection(s). Vanda shall be responsible for the selection and registration of such trademark(s) in all countries of the Territory at its own cost. In the event the sublicense granted hereunder is terminated in a particular country, other than pursuant to Section 10.3 or as a result of Vanda's termination of this Sublicense Agreement for breach pursuant to Section 10.5, and Novartis exercises the right to promote, market or sell the Product in such country then upon Novartis' request (a) Vanda shall grant to Novartis or its designee(s) a trademark license at a royalty to be negotiated in good faith (which royalty shall not be less than [*] percent ([*]%) and no more than [*] percent ([*]%) on [*]) at such time to use such trademark in connection with marketing the Product in such country, subject to reasonable quality control by Vanda with respect to the Product sold under this Section 2.5(a), or (b) Novartis or its designee(s) shall select and register at Novartis' cost a trademark of its own in connection with the marketing of the Product in such country, provided such Novartis trademark is not in any way confusingly similar to the Vanda trademark. Novartis shall use the trademark that

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that party acting alone has chosen as a trademark (rather than a Vanda trademark) in promoting, marketing or selling the Product in any country that is a member of a free trade union or other economic grouping (e.g., the European Union, EEA, NAFTA, ASEAN and ANDEAN Pact countries) where Vanda is promoting, marketing or selling the Product under a Vanda trademark.

2.6 If Vanda notifies Novartis in writing that Vanda (and/or its Affiliate(s)) is not willing or does not have the capability itself or cannot enter into a Sublicense or other agreement (providing the necessary expertise and resources) in country(ies) outside those covered by NAFTA and the European Union to:(a) develop the Compound or Product (as the case may warrant), and (b) manufacture the Compound and/or market the Product (as the case may warrant) at a Competitive Industry Standard Level at the date of Product approval in such country(ies), then Novartis shall have the right to terminate the sublicense granted by this Sublicense Agreement but only with respect to such country(ies), unless the parties agree in writing to extend such time frame.

2.7 If the Product is not launched in the United States or a Major Market Country at a Competitive Industry Standard Level by Vanda, its Affiliate and/or Sublicensee within [*] after the date of receiving the approvals necessary to commercialise the Product in [*] or a Major Market Country Vanda and Novartis shall review the progress of launch efforts, it being understood that the parties, at the request of a party, may review the progress of launch efforts prior to the end of [*] period, and Vanda shall keep Novartis and HMRI informed on a regular basis of the status of its launch efforts after receiving the approvals necessary to commercialize the Product in the United States or a Major Market Country until such time that launch is achieved in the United States or a Major Market Country. If launch in the United States or a Major Market Country is not achieved within [*] after the date of receiving the approvals necessary to commercialize the Product in such country(ies) (circumstances shall not include events of force majeure as defined in Section 13), or in any event within [*] after Product approval then the sublicense granted by this Sublicense Agreement shall terminate, but only with respect to the particular country where launch was not achieved within [*] time frame, as the case may be, unless the parties agree in writing to extend such time frame (the parties shall discuss in such event, factors including but not limited to the necessity to obtain approval of Product for its target indication(s)).

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2.8 If an NDA or equivalent ex-US. regulatory approval in the European Union (Marketing Authorization Application via the Centralized Procedure or marketing approvals for the member countries of the European Union via the mutual recognition procedure) for the Product not obtained within [*] of Vanda's or its Affiliate's or Sub-licensee's filing of an NDA or such other equivalent ex-U.S. filing, and such failure is solely due to circumstances within Vanda's reasonable control, then the parties shall discuss the reasons and proposed remedies (or such failure in good faith; provided, however, that if the parties are unable to agree on. Any such remedies, Novartis shall have the right to terminate the sublicense granted by this Sublicense Agreement, but only with respect to the United States or the European Union where such approval was not obtained, unless the parties agree in writing to extend such time frame. If, however, [*] such failure is due to circumstances beyond the reasonable control of Vanda (including without limitation delays on the part of the regulatory agencies), the [*] period shall be extended to take into account such circumstances, the duration of any such extension to be mutually agreed.

2.9 Subject to the provisions of Section 2.9(d), [*] with respect to any country(ies) which cease to be included within the Territory, and in the event that (i) Novartis or its Affiliate(s) or Sub-licensee(s) elects to commercialise the Product or Compound in such country(ies) and (ii) Vanda, its Affiliate(s) or Sublicensee(s) has an NDA filing in the United States or an equivalent filing in the European Union, then in consideration for the use of any IND, NDA or other governmental approval or associated developmental work held or owned by Vanda related to the Compound or Product:
(a) At Novartis' request, and subject to Sections 6.3 and 11.5 hereof, Vanda shall license or otherwise make available under applicable law the benefit of such approvals or work to Novartis or an Affiliate or Third Party designated by Novartis (which third party could be HMRI or Titan), who shall thereafter have the rights to develop, register, manufacture, market and sell the Compound and Product in such country(ies) utilizing such approvals or work, and Novartis (or such Affiliate or Third Party) shall pay to Vanda a royalty [*]. Such royalty shall not be greater than [*] percent ([*]%) on [*]

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Upon expiration of the Patent in such country, only the royalty paid to Vanda for the use of the Vanda trademark under Section 2.5 shall be paid to Vanda for so long as such trademark is utilized. If a trademark license has not been granted to HMRI, Titan or Novartis in such country, no royalty shall be paid to Vanda upon the expiration of the Patent.

(b) Novartis shall share [*] with Vanda any [*] received from a Third Party in connection with the exercise of such option only. If Vanda has not paid to Novartis the up front license fee and all of the milestone payments provided for in Sections 3.1(a) through (c), then [*].

(c) Notwithstanding anything contained herein to the contrary, Novartis shall not be required to pay to Vanda a royalty on sales of the Product that, when added to the royalty payments for a license under the Vanda trademark payable under Section 2.5, exceeds [*] ([*]%).

(d) If the circumstances leading up to the termination of the Sublicense Agreement pursuant to Section 2.8 are due to any misrepresentations, omissions (of information owned or controlled by Novartis or its Affiliates; as of the date hereof) or falsifications with respect to such Know-How, information or data or fraud by Novartis or its Affiliates, then subject to the following sentence, Novartis shall [*]. In the case of misrepresentations, omissions (of information owned or controlled by HMRI, Titan or their Affiliates as of the date hereof) or falsifications with respect to such Know-How, information or data or fraud only by HMRI, Titan or their Affiliates, and a termination of the HMRI Agreement pursuant to Section 2.5 of the HMRI Agreement, Novartis shall be [*].

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2.10 In the event that Vanda or a Sublicensee intends to seek a co-promotion or co-marketing partner for the Product in the United States, Vanda shall notify Novartis thereof in writing. Novartis shall then notify Titan thereof, and HMRI shall have a right of first negotiation with Vanda or the Sublicensee on such a collaboration. If HMRI exercises its right of first negotiation, then HMRI and Vanda or the Sublicensee shall negotiate in good faith for a period of [*] from the date of notification by Novartis to HMRI. If the negotiating parties are unable to enter into a separate definitive written agreement regarding such collaboration by the end of such [*] period, first Novartis and then Titan will have the right to negotiate with Vanda in good faith for a [*]. In the event that Vanda or its sublicensee is unable to enter into a separate definitive written agreement regarding such collaboration by the end of such [*] period with Novartis or Titan, Vanda or the Sublicensee shall be free to enter into a collaboration with any Third Party subject to all other terms of this Sublicense Agreement and shall have no further obligation to negotiate with HMRI. For the purposes of this Section 2.10, the term "co-promotion or co-marketing partner" will not include [*] that may be engaged by Vanda or a Sublicensee.

3. PAYMENTS AND ROYALTIES.

3.1 As consideration for the sublicenses granted to Vanda by Novartis under this Sublicense Agreement, Vanda shall make the following payments to Novartis:

(a) An up front license fee of [*] shall be paid by Vanda to Novartis in cash within [*] days of both parties' execution of this Sublicense Agreement.

(b) A first development milestone payment of [*] be payable by Vanda to Novartis [*] upon [*] for the Product in the Field [*]. As used in this Section, [*]

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Such milestone payment shall be paid in cash by Vanda directly to Novartis within [*] of the date of [*]. The [*] provided for herein shall, unless otherwise expressly provided for herein, be [*].

(c) A second development milestone payment of [*] which shall be payable [*] by Vanda to Novartis on [*].

(d) Vanda shall notify Novartis in writing [*] prior to Vanda's estimated achievement of each milestone event described in Sections 3.1(b) and 3.1 (c)(i) above and Vanda shall make each such payment within [*] of the achievement of the milestone event for which such payment is due.

3.2 (a) Unless Novartis instructs Vanda in writing otherwise, all cash payments by Vanda to Novartis (including, without limitation, up front payments, milestone payments, and royalties) shall be made by bank wire transfer as follows:

Bank: [*]
Swift: [*]
Correspondent Bank for USD: [*]
USD Account Novartis AG, Basel/Switzerland: [*]
USD Account Novartis Pharma AG, Basel/Switzerland: [*]

(b) At least [*] days prior to the planned wire transfer to either of the above accounts, Vanda shall notify Novartis of the amount and date the cash shall be transferred.

(c) In the event of a late payment hereunder by Vanda to Novartis, Vanda shall pay to Novartis [*]([*]%) on the outstanding balance until such balance, including interest, is paid in full to Novartis. The acceptance of such late

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payment shall act as a waiver of any rights Novartis may have hereunder due to a breach by Vanda relating solely to such payment being made late.

3.3 As consideration for the sublicense granted to Vanda in this Sublicense Agreement, Vanda shall pay to Novartis, in those countries where, and for the period, Patents claiming a priority date of May 19, 1989 and December 29, 1989 or Patents owned by Novartis AG in a particular country in the Territory for which a patent had been granted validly claiming Iloperidone or the manufacture, formulation or the use thereof for use in the Field:

(a) [*] per cent ([*]%) royalty on annual Net Sales of the Product of Vanda, its Affiliates' and Sublicensees' annual Net Sales of the Product in the Territory.

(b)Vanda shall also pay to Novartis the following milestone payments:

| Net Sales Milestone Milestone payment from Vanda to Novartis |
|---|
| (A) Achievement of [*] [*] |
| (B) [*] |
| [*] (C) |
| [*] [*] |

No [*] shall be payable by Vanda within one calendar year. In the event that a [*] becomes due and payable [*]. Milestone (C) shall be payable at the earliest on [*].

3.4 (a) In order to spread royalty payments hereunder over a sufficient period of time, in each of those countries in the Territory where the Patents claiming a priority date of May 19, 1989 and December 29, 1989 or Patents owned by Novartis AG in a particular country for which a patent had been granted validly claiming Iloperidone or the manufacture, formulation or use hereof for use in the Field have expired, Vanda's obligations to pay royalties for use of Patents in such country shall cease, and Vanda and/or any of its Sublicensees shall pay

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directly to HMRI a royalty for [*] percent ([*]%) on Vanda's, its Affiliates' and any Sublicensees' annual Net Sales of the Product in each such country for a period of ten (10) years after the expiration of the final remaining Patent claiming a priority date of May 19, 1989 and December 29, 1989 or Patents owned by Novartis AG in each such country. After the end of such ten (10) year period, no further royalties arising from sales of the Product in such country shall be due to HMRI and Vanda shall be entitled to continue to use [*] on a fully-paid, irrevocable basis in accordance with Section 10.3.

(b) In the event that a Third Party's generic version of Iloperidone is actively marketed in a process patent country (that is, any country in which the only protection in relation to processes for the manufacture of Iloperidone has been obtained and not protection for Iloperidone as a new chemical entity per se) in the Territory where a Patent(s) has been granted validly claiming Iloperidone or the manufacture, formulation or use thereof for use in the Field exists, then subject to Sections 3.4( c) and (d) below, the royalty rate that Vanda shall pay to Novartis on Vanda's or its Affiliate's or Sublicensees annual Net Sales of the Product in that process patent country shall be [*] percent ([*]%) until such Patent(s) expires, provided: (i) [*]; and (ii) [*]. Unless otherwise agreed to by the parties, [*] until [*] or until [*].

(c) If it is demonstrated to the satisfaction of both Parties or the binding unappealable judicial determination under Section 3.4(b)(ii) holds that Patent(s) are not being infringed in such process patent country, the royalty rate that Vanda shall pay to Novartis on Vanda's or its Affiliate's or Sublicensee's annual Net Sales of Product in that process patent country shall [*] percent ([*]%) until such Patent(s) expires.

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(d) If the binding, unappealable judicial determination under Section 3.4(b)(ii) holds that Patent(s) are being infringed in such process patent country, [*]. If as a result, the commercialization of Iloperidone by the Third Party in that country is discontinued:

(i) the royalty rate(s) that Vanda shall pay to Novartis on Vanda's or its Affiliate's or Sublicensee's annual Net Sales of the Product in that process patent country shall be, commencing on the later of: (A) the date such binding, unappealable judicial determination is rendered, and (B) the date (if any) specified in such determination that commercialization of such Third Party generic version of the Product is to be discontinued, those royalty rates provided for in Section 3.3 until such Patent(s) expires; and
(ii) Vanda shall repay to Novartis, within thirty (30) days after the later of: (A) the date such binding, unappealable judicial determination was rendered, and (B) the date (if any) specified in such determination that commercialization of such Third Party generic version of the Product is to be discontinued, an amount equal to the difference between the royalties that Vanda would have paid to Novartis under Section 3.3, and the amount of royalties that Vanda actually paid to Novartis at the [*] percent ([*]%) rate, for the period commencing on the date the royalty rate for that process patent country was reduced to [*] percent ([*]%) pursuant to Section 3.4(b), and ending on the later of: (A) the date such binding, unappealable judicial determination was rendered, and (B) the date (if any) specified in such determination that commercialization of such Third Party generic version of the Product is to be discontinued.

(e) After a Patent(s) in any process patent country expires, Vanda and/or its Sublicensee shall pay directly to Novartis royalties as provided for in Section 3.4(a).

3.5 As consideration for the sublicense granted to Vanda under this Sublicense Agreement in those countries in the Territory for which (a) a Patent application for the Compound or Product is pending or (b) no Patent application has been filed or (c) Patents have been abandoned or been held invalid or unenforceable by a decision of a court or tribunal of competent jurisdiction from which no appeal is or can be taken (collectively, "Non-Patent Countries"), Vanda shall pay to Novartis, on a country-by-country basis, a [*] percent

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([*]%) royalty for [*] on Vanda's, its Affiliates' and any Sublicensees' annual Net Sales of the Product in the Non-Patent Countries for a period of five (5) years from the date of the first commercial sale of the Product in each such country by Vanda, its Affiliates or Sublicensees. After the end of such five (5) year period, no further royalties arising from the sales of the Product in such country shall be due. However, with respect to Section 3.5(a) or (b), if at any time during or after such five (5) year period a Patent for Compound or Product is issued in such country, subject to Section 3.4, Vanda shall pay to Novartis, from the date the Patent was issued, the same royalties as provided for in Sections 3.3(a) and (b) above. Upon expiration of Vanda's obligation to pay a royalty under such Patent, notwithstanding Section 3.4, a [*] percent ([*]%) royalty for [*], on Net Sales of the Product in such country, shall be paid by Vanda and/or any of its Sublicensees directly to HMRI for a period of five (5) years after which Vanda shall be entitled to continue to use the Know-How on a fully-paid, irrevocable basis in accordance with Section 10.3.

4. COMPULSORY LICENSES AND THIRD PARTY LICENSES

4.1.(a) In the event that during the term of this Sublicense Agreement a governmental agency in the Territory grants or compels HMRI and/or Titan and/or Novartis to grant a license to any Third Party for the Compound or Product in a country(ies), it is the intent of the parties that [*]. Therefore, in the event that Novartis, Titan or HMRI is compelled to grant a license to a Third Party, Novartis, Titan and HMRI will [*] consideration will be given to Novartis' obligations to HMRI and Titan under Section 4.l(d) of the Titan Agreement.

(b) If a governmental authority in a country in the Territory imposes a maximum royalty rate, such that lower royalty rates than would otherwise apply under this Sublicense Agreement are mandated in such country, then the royalty rates provided for herein shall be reduced to

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equal such lower rates for sales of the Product in such country for the period such lower royalty rate is required by any governmental authority and shall cease when Vanda's royalty payment obligations cease under this Sublicense Agreement.

4.2 If, during the term of this Sublicense Agreement, HMRI and Vanda agree that patent(s) of a Third Party exists in the Territory covering the manufacture, use or sale of the Compound or Product, and if it should prove, in the reasonable judgment of Vanda and HMRI, impractical or impossible for Vanda or its Affiliates or Sublicensees to continue the activity or activities sublicensed hereunder in the Field without obtaining a royalty-bearing license from such Third Party under such patent(s) or if Vanda and HMRI otherwise agree it is desirable for HMRI to acquire any Third Party patent or license in connection with the development or manufacture of Compound or Product covered by Patents in the Territory, then in either case the provisions of Section 8.8(c) shall apply.

4.3 If, after attempting in good faith to resolve the issue relating to licensing Third Party patents in Section 4.2 between themselves, Vanda and HMRI are unable to agree within ninety (90) days as to whether it is impracticable or impossible for Vanda, its Affiliates or Sublicensees to continue the activity or activities sublicensed hereunder without obtaining a royalty-bearing license from a Third Party, the issue shall be submitted to a disinterested, competent and experienced patent attorney reasonably acceptable to both Vanda and HMRI for resolution. If Vanda and HMRI cannot agree on the selection of such patent attorney, then each party shall select a patent attorney and the selected patent attorneys shall select a mutually acceptable patent attorney who will determine whether such Third Party rights materially inhibit Vanda's ability to manufacture, distribute or sell the Compound or Product. The compensation to, and expense of such patent attorney shall be borne [*].

5. DEVELOPMENT

5.1 Upon the signing of this Sublicense Agreement, Vanda shall have full legal and financial responsibility for all costs that are incurred and all activities that are undertaken after the

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signing of this Sublicense Agreement, which are related to development, safety and required periodic reporting to the FDA and equivalent ex-U.S. regulatory agencies, marketing, regulatory approvals, price registrations, and other activities required by Vanda or its Sublicensee(s) (or their respective agents or distributors) to obtain appropriate government approvals for, and to commercialize, the Compound and Product in the Territory. Other than as expressly provided for in Section 5.4, Vanda shall not assume, nor shall Vanda be liable for, any costs or activities (whether scientific, financial or otherwise) relating to the Compound or Product that were incurred or undertaken prior to the signing of this Sublicense Agreement (including without limitation any costs, expenses, damages, losses, fines, penalties or the like that may be awarded or assessed after the signing of this Sublicense Agreement, but which arise out of events and activities that occurred prior to the signing of this Sublicense Agreement).

5.2 Provided that the Affiliates, Sublicensees and other Third Parties agree to substantially the same terms of confidentiality in Section 6.4 hereof, Vanda may appoint such Affiliates, Sublicensees(s) and other Third Parties to perform any and all development activities necessary to obtain government approvals for the Product in the Territory. The appointment of any Sublicensee shall require HMRI's prior written consent, which consent shall not be unreasonably withheld.

5.3 Vanda shall, in a manner [*] exercise its Commercially Reasonable Efforts and diligence in conducting clinical trials and commercializing the Product alone or in collaboration with a Third Party, and in undertaking those investigations and actions required to obtain appropriate governmental approvals to manufacture the Compound and market the Product in the Territory. All such activity shall be undertaken at Vanda's expense. Novartis shall arrange with HMRI to provide assistance or consultation at Vanda's expense in support of the development of the Compound or Product, but HMRI in its discretion may limit such assistance and consultation.

5.4 The parties further agree that:

(a) Novartis will be informed by Vanda on a timely and regular basis of the development, registration and commercialisation of the Compound and Product in the Territory, and will

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have an opportunity to regularly meet with Vanda and provide input into the development and registration process, and

(b) all of Novartis contractual obligations to Third Parties involved in the development and registration process for the Compound and Product (including Contract Research Organizations (CROs) existing as of the date of this Sublicense Agreement, which CROs are identified in APPENDIX E), will be considered by Vanda to the extent they are not inconsistent with Vanda's Standard Operating Procedures.

(c) Vanda shall be solely responsible for the negotiation of contracts with any CROs and other organisations it desires to work on development activities relating to the Compound and/or Product and Vanda shall bear all legal and financial responsibility under such contracts.

5.5 Any inventions or discoveries or improvements which arise from Vanda's, its Affiliates' or Sublicensees work relating to the development and/or manufacture of the Compound and/or Product shall be owned by Vanda, but shall be licensed to HMRI, Titan and Novartis at their option on a worldwide, non-exclusive, perpetual basis, at a license fee and/or royalty [*]. In the case of any inventions or discoveries or improvements arising in areas outside of the original field, which was defined in the HMRI Agreement and the Titan Agreement, shall be owned by Vanda, but shall only be licensed to HMRI, at HMRI's option on a worldwide, non-exclusive, perpetual basis, at a license fee and/or royalty [*]. Notwithstanding anything to the contrary in this Sublicense Agreement, in the event that this Sublicense Agreement between Novartis Pharma AG and Vanda Pharmaceuticals, Inc. expires or terminates, in its entirety or with respect to any country, (except as a result of material breach of the Agreement by Novartis), any inventions or discoveries or improvements which arise from Vanda's, its Affiliates' or Sublicensees' work relating to development and/or manufacture of the Compound and/or Product (the "Vanda IP") shall be disclosed to HMRI and be owned by and become the property of HMRI (or assignees or successors, as the case may be), but shall be licensed to Titan under Section 2.1(a) of the HMRI-Agreement and subsequently to Novartis under the Titan Agreement. Vanda shall promptly undertake any and all actions necessary to effectuate such ownership in and assignment to HMRI. If the Vanda Sublicense Agreement expires or terminates with

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respect to a particular country, then the requirements of this Section 5.5 and Aventis' rights to the Vanda IP shall be limited to such country.

5.6 deleted.

5.7 In addition to that which is required under Section 5.4(a), Vanda shall provide to Novartis regular written reports at least every [*] setting forth significant developments and improvements, including the status and progress of the development and/or registration activities, that affect the Compound or Product.

5.8 Vanda, or its Sublicensees, shall promptly advise Novartis in writing upon the submission and filing for government regulatory approval to manufacture and market the Product, and upon the receipt of government regulatory approval to market the Product, in each case in each country in the Territory, and shall commence marketing the Product in such country in accordance with Section 5.3.

5.9 Subject to applicable laws and regulations, labeling on all Product sold by or on behalf of Vanda pursuant to this Sublicense Agreement, and all advertising, marketing and promotional materials used in connection therewith, will identify Novartis as the licensor of the Product.

5.10 If at any time during the term hereof a product is developed by Vanda or any of its Affiliates or Sublicensees, which product contains the Compound and one or more other pharmaceutically active ingredients for use in the Field (a "Combination Product"), Novartis shall [*], this Sublicense Agreement shall be [*] by Novartis and Vanda to provide for such Combination Product.

6. EXCHANGE OF INFORMATION AND CONFIDENTIALITY.

6.1 Upon the signing of this Sublicense Agreement, Novartis shall deliver to Vanda, all available Know-How, documents, information and data which is owned or controlled by Novartis and its Affiliates, which may be reasonably expected to assist Vanda in developing, registering, manufacturing and marketing the Compound and Product in the Territory. After the execution of this Sublicense Agreement, there shall be a [*] transition period

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during which Novartis shall provide, at its own cost, reasonable resources, expertise, and documents to effectively transfer the Know-How and development activity to Vanda. Banked DNA samples and or animal tissues treated with the compound will only be made available to Vanda for further studies in accordance with the protocols and informed consents set forth at the time of sample acquisition provided however that no human tissue samples with identifiable patient data will be transferred to Vanda. All raw data and individual clinical and genetic data will be transferred to Vanda under a mutually agreed coding schema, in order to protect patient confidentiality. All original identifiable patient data will, however be provided to the FDA as part of the submission package. If Vanda requires additional genotyping on existing samples, Novartis will contract this work out, in accordance with the informed consents, on Vanda's behalf and at Vanda's cost. If further DNA samples from past study patients are desired, Vanda will revisit the sites and try to consent or reconsent these patients for additional DNA sampling. Upon Novartis' receipt of the up front license fee referred to in Section 3.1(a) hereof, Vanda and Novartis each shall promptly provide written notification to the FDA that Novartis assigns and that Vanda assumes sponsorship of the U,S. IND No. 36,827 (as specified in 21 CFR 314.72). Within [*] after the date of such written notification, Novartis shall transfer the U.S. IND for the Compound or Product to Vanda. Until such transfer is made, Vanda shall have the right to make reference to such Compound or Product owned or controlled by Novartis or its Affiliates. Furthermore, upon Novartis' receipt of the upfront license fee referred to in Section 3.1(a), Novartis shall arrange for the transfer to Vanda of Canadian IND Control No. 27740.

6.2 Vanda shall have Exclusive use, subject to the terms of this Sublicense Agreement and in particular Section 2.3, of all Know-How, documents, information, data and material for the development, registration, manufacture and marketing of the Compound and the Product for use in the Field in the Territory. Novartis and its respective Affiliates shall keep confidential all Know-How, documents, information and data in their possession or received from or generated by or on behalf of Vanda that is not already in the public domain relating to the Compound and Product regarding the use in the Field with the same level of care that Novartis and its respective Affiliates use for their own confidential information. Upon Novartis' request during the term of this Sublicense Agreement, Vanda shall deliver to Novartis a copy of all such information and data in a form to be mutually agreed upon, within thirty (30) days after Novartis' request, it being understood and agreed that any and all such information and data will be made available by Novartis to Titan, upon Titan's request.

6.3 Subject to the confidentiality obligations of this Article 6, Vanda shall make available and HMRI, Titan and Novartis shall be able to freely use Know-How and documents, information and data relating to the Compound and/or Product disclosed or generated by Vanda, its Affiliates and Sublicensees and applications for government approvals (United States or

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European Union or Japan), reports on the status and progress of the development of the Compound or the Product and the like in any country(ies) deleted from the Territory and to which this Sublicense Agreement has been terminated pursuant to the terms hereof.

6.4 During [*] Vanda shall not reveal or disclose to a Third Party or use for any purpose other than to perform its obligations herein any Confidential Information (as defined below) without first obtaining the written consent of Novartis, except as may be otherwise provided herein, or for securing essential or desirable authorizations, privileges, licenses, registration or rights from governmental agencies, or is required to be disclosed to a governmental agency or is necessary to file or prosecute Patent applications concerning the Compound or Product or to carry out any litigation concerning the Compound or Product provided, however, that Vanda notifies Novartis in writing in a reasonably sufficient time frame prior to making such disclosure that Vanda intends to make such disclosures and the details thereof, and Vanda seeks confidential treatment where available of such Confidential Information from such governmental agencies. This confidentiality obligation shall not apply to such information which is or becomes a matter or public knowledge through no fault of Novartis, or is already in the possession of Novartis as evidenced by written records, or is disclosed to Vanda by a Third Party having the right to do so, or is subsequently and independently developed by employees of Novartis or its Affiliates who had no knowledge of the Confidential Information. Vanda shall take reasonable measures to assure that no unauthorised use or disclosure is made by others to whom access to such information is granted. As used herein, "Confidential Information" means, any confidential or proprietary information of HMRI, Titan or Novartis or their Affiliates, including any present or future formulas, research project, work in process, inventions, procedures, development, scientific, engineering, manufacturing, marketing, business or financial plan or records, products, sales, suppliers, customers, or investors, whether such confidential or proprietary information is in oral, written, graphic or electronic form (including all copies in whole or in part of any of the foregoing) and which derives value from being known to the disclosure or owner.

6.5 After transfer of the United States and Canadian INDs to Vanda under Section 6.1, Novartis and Vanda shall co-operate with respect to the exchange of adverse event and safety information associated with Compound and Product, and such information shall be coordinated by Vanda central clinical, safety and epidemiology organisation. Details of the obligations of the parties with respect to reporting such information to each other, and processing of this data shall be covered in an addendum following execution of this Sublicense Agreement.

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6.6 Nothing herein shall be construed as preventing Vanda from disclosing any information received from Novartis to an Affiliate, Sublicensee, distributor, contractor, agent, consultant, legal counselor other Third Party involved in the development, manufacture, marketing, promotion or sale of the Compound or Product, provided that such Affiliate or Sublicensee or other Third Party has undertaken a similar obligation of confidentiality with respect to the Confidential Information.

6.7 In the event that a court or other legal or administrative tribunal, directly or through an appointed master, trustee or receiver, assumes partial or complete control over the assets of Vanda based on the insolvency or bankruptcy of Vanda, Vanda shall promptly notify the court or other tribunal (i) that Confidential Information received from Novartis remains the property of HMRI, Titan or Novartis, or their respective Affiliates, as the case may be, and (ii) of the confidentiality obligations under this Sublicense Agreement. In addition, Vanda shall, to the extent permitted by law, take all steps reasonably necessary or desirable to maintain the confidentiality of the Confidential Information of HMRI, Titan or Novartis, as the case may be, and to ensure that the court, other tribunal or appointee maintains such information in confidence in accordance with the terms of this Sublicense Agreement.

6.8 No public announcement or other disclosure to a Third Party concerning the existence of or terms of this Sublicense Agreement shall be made, either directly or indirectly by either party to this Sublicense Agreement, except as may be legally required, without first obtaining the approval of the other party, which approval shall not be unreasonably withheld, and shall be given within a reasonable time. The party desiring to make any such public announcement or other disclosure shall provide the other party with a written copy of the proposed announcement or disclosure in sufficient time prior to the proposed public release, to allow such other party to comment upon the nature, content and timing of such announcement or disclosure, prior to the proposed public release. Notwithstanding the foregoing, Vanda shall be permitted to refer to this Sublicense Agreement in presentation to prospective investors.

6.9 Neither party shall submit for written or oral publication any manuscript, abstract or the like which includes Know -How, data or other information generated and/or provided by Novartis or Vanda pursuant to this Sublicense Agreement without first obtaining the prior written consent of the party generating or providing such information, which consent shall not be unreasonably withheld. The contribution of each party shall be noted in all publications or presentations by acknowledgment or co-authorship, whichever is appropriate.

7. NOVARTIS SUPPLY OF COMPOUND AND PRODUCT TO VANDA.

7.1 Novartis shall supply Compound and Product to Vanda under the following conditions:

(a) Within [*] after the Effective Date of this Sublicense Agreement as agreed to by the parties in good faith, Novartis will, [*], arrange for the transfer to Vanda, to a single site to be designated by Vanda, all quantities of milled Compound available to it as of the Effective Date of this Sublicense Agreement.

(b) Title to, and risk of loss with respect to, all Compound and the Product supplied by Novartis to Vanda under this Section 7.1 shall pass to Vanda upon the receipt of such Compound and Product by Vanda or its designee at its point of delivery. Novartis shall not be liable for any loss of such Compound and/or Product except where such loss is the result of Novartis negligence or willful misconduct.

(c) Novartis shall provide to Vanda the most recent certificate of analysis for any shipment of Compound or Product.

(d) Novartis makes no representation or warranty that Compound and Product supplied by it to Vanda for clinical trials will conform to the IND specifications therefore as well as all laws and regulatory requirements, including current Good Manufacturing Practices applicable to the Compound and Product when used in clinical trials in accordance with the IND.

7.2 Novartis shall provide information and assistance to Vanda with respect to the Compound and Product as follows:

(a) Within [*] after the full execution and delivery of this Sublicense Agreement, Novartis shall deliver to Vanda any and all Know-How, documentation, data and other information owned or controlled by Novartis and its Affiliates, that Vanda may reasonably require for the manufacture of the Compound and Product. Such information shall include without limitation the specifications for the Compound and Product and methods of analysis for testing the Compound and Product, as currently described within the IND regulatory documentation, including Chemistry-Manufacturing/Controls(CMC) information amendments and the technology transfer file.

(b) Novartis shall make reasonable commercial efforts to arrange for HMRI to provide to Vanda or its designated Third Party assistance for the transfer of manufacturing technology, through documentation, consultation and face-to-face meetings, to enable Vanda or such Third Party to proceed with development of commercial-scale manufacturing. If requested by Vanda or such Third Party, Novartis shall visit the designated commercial manufacturing facility, with the limitation of [*] visits, not to exceed a total of [*],

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for which Vanda shall bear all the costs of reasonable travel and other out-of-pocket expenses.

7.3 Novartis represents and warrants that the specifications for the Compound and Product are consistent with those set out in the INDs sponsored by Novartis.

7.4 Upon expiration or termination of this agreement, Vanda shall return to Novartis, all unused Compound or Product supplied by Novartis hereunder.

8. PATENT PROSECUTION; MAINTENANCE AND EXTENSION; INFRINGEMENT

8.1 [*] shall be responsible for the filing, prosecution (including oppositions) and maintenance of the Patents excluding Novartis Patents (hereinafter "HMRI-Patents") [*]. For so long as the license grants set forth in Article 2 remain in effect, [*] agrees to file and prosecute and maintain the HMRI-Patents in the Territory, provided that the foregoing is subject to [*] reasonable business judgment. [*] shall keep [*] informed, [*], of important issues relating to the preparation, filing, prosecution and maintenance of such HMRI-Patent applications and HMRI-Patents. [*], shall have the right to comment on [*] preparation, filing, prosecution and maintenance of HMRI-Patent applications and HMRI-Patents, and [*] shall give clue consideration to Vanda's comments, but HMRI shall make all decisions regarding the same.

8.2 If [*] elects not to seek patent protection in countries listed in APPENDIX F or to maintain patent protection on HMRI-Patents listed in APPENDIX A in any country in the Territory to the extent that HMRI-Patents claim the Compound or the Product (or formulations, use or manufacture thereof), [*] shall have the right, at its option [*], to file, prosecute (including oppositions) and maintain any such HMRI-Patent applications and HMRI-Patents in HMRI's name, and any HMRI-Patent issued therefrom shall be owned by HMRI. [*] shall advise [*] of [*] decision) not to seek or maintain patent protection in a reasonably timely manner. In the event that a HMRI-Patent is issued covering the Compound or Product in any country in the Territory under the conditions of this Section 8.2, [*] shall pay directly to [*] a [*] ([*]%) royalty on Net Sales of Product in such country, for a period of [*] years from the date of such patent issuance in such country, in recognition of [*] Know-How and manufacturing rights and the right to make and sell the Compound or Product in such

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country. Legal fees and expenses, [*], incurred [*] shall be [*].

8.3 [*] shall be responsible for the filing, prosecution (including oppositions) and maintenance of the Patents owned by Novartis (hereinafter "Novartis-Patents") [*]. [*] agrees to file and prosecute and maintain the Novartis-Patents in the Territory, provided that the foregoing is subject to [*] reasonable business judgment. [*], shall have the right to comment on [*] preparation, filing, prosecution and maintenance of Novartis-Patent applications and Novartis-Patents, and [*] shall give due consideration to Novartis' comments. If [*] elects not to maintain patent protection on Novartis-Patents in any country, [*] shall have the right, at its option, to file, prosecute and maintain any such Novartis-Patent. [*] shall have the right but not the obligation to enforce Novartis-Patents against Third Parties [*], and if [*] does not act, [*] may in its sole discretion take such enforcement action as [*] deems necessary.

8.4 Each of HMRI, Titan, Novartis and Vanda shall make available to the other, its employees, agents, subcontractors or consultants (including its authorized attorneys) to the extent reasonably necessary or appropriate to enable the appropriate party to file, prosecute and maintain patent applications and resulting patents subject to this Sublicense Agreement to the extent that Patents claim the Compound or Product (or formulations, use or manufacture thereof). Where appropriate, each of HMRI, Titan, Novartis and Vanda shall sign or cause to have signed all documents relating to said patent applications or patents [*].

8.5 Novartis shall obtain all assignments or licenses, as applicable from the patent holder of the Patents, to the same extent as Novartis is entitled to receive such assignments or licenses from HMRI and Titan under the HMRI Agreement as applicable, to provide Vanda with the same degree of exclusivity in the Territory under the Patents as Novartis is granted by HMRI and Titan under the Titan Agreement.

8.6 Promptly after it is notified by HMRI and Titan, Novartis shall notify Vanda in writing of (a) the issuance of each HMRI-Patent, giving the date of issue and patent number for each patent, and (b) each notice pertaining to any HMRI-Patent which HMRI receives as patent owner pursuant to the Drug Price Competition and Patent Term Restoration Act of 1984, or other similar laws now or hereafter in effect which extend the Patent life, or pursuant to comparable laws or regulations in other countries in the Territory. [*], HMRI, Titan, Novartis and Vanda shall co-operate with each other in applying for patent term extensions (including Supplementary Protection Certificates in European Union member states) where applicable in any country of the Territory. HMRI shall have full

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responsibility and authority in the decisions regarding filing for the foregoing HMRI-Patent extensions [*] although Vanda, through Novartis, shall be consulted and its opinions given due consideration in such decision-making process. If HMRI elects not to pursue extension of any HMRI-Patents, Vanda shall have the right (but not the obligation) to apply for such extension in HMRI's name [*], and HMRI shall reasonably co-operate in the filing and procurement thereof.

8.7 Except as otherwise expressly provided in this Sublicense Agreement, under no circumstances shall a party hereto, as a result of this Sublicense Agreement, obtain any ownership interest in or other right to any technology, Know-How, Patents, pending Patent applications, products, or biological material of the other party, Titan or HMRI, including items owned, controlled, discovered, invented or developed by the other party, Titan or HMRI, or transferred by the other party, Titan or HMRI to that party, at anytime pursuant to this Sublicense Agreement which is not a direct result of the study, Know-How and experimentation of the Compound and Product.

8.8 Each of Vanda, Novartis, Titan and HMRI shall promptly, but in any event no later than [*] after receipt of notice of such action, notify the other in writing of any Patent nullity actions, any declaratory judgment actions or any alleged or threatened infringement of Patents or misappropriation of intellectual property comprising Patents, or if Vanda, HMRI, Titan or Novartis, or any of their respective Affiliates or Sublicensees, shall be individually named as a defendant in a legal proceeding by a Third Party alleging infringement of a patent or other intellectual property right of such Third Party as a result of the manufacture, production, use, development, marketing, selling or distribution of the Compound or Product, or of any information or notification regarding the Patents.

8.9 [*] shall have the first right to respond to, defend or prosecute any actions, challenges, infringements, misappropriations or proceedings by a Third Party alleging infringement described in Section 8.8. In the event [*] elects to do so, [*] will co-operate with [*] and its legal counsel, join in such suits as may be brought by [*], and be available at [*] reasonable request to be an expert witness or otherwise to assist in such proceedings and at [*] expense. [*] will co-operate with [*] and its legal counsel and keep [*] and its counsel reasonably informed at all times as to the status of [*] response or defense.

8.10 In the event that [*] elects to respond to, defend or prosecute any actions, challenges, infringements, misappropriations or proceedings by a Third Party claiming infringement described in Section 8.8 hereof, then: (a) legal fees and other costs and expenses of [*] associated with such response or defense shall be paid by [*]; (b) legal fees and other

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costs and expenses associated with such response or defense incurred by [*], shall be paid by [*]; (c) the costs of acquiring Third Party patents or licenses and any settlement, court award, judgment or other damages shall be paid by [*] to such Third Parties [*]; provided, however, [*] shall not be obligated to pay for any patents or licenses for uses of the Compound or Products not disclosed in the Patents as of the date of the execution of the HMRI Agreement; and (d) any amounts recovered from Third Parties in connection with such response or defense shall be applied [*].

8.11 In the event that [*] respond to, defend or prosecute any actions, challenges, infringements, misappropriations or proceedings by a Third Party alleging infringement described in Section 8.8 hereof or [*] abandons any such action, [*] shall notify [*] promptly after receiving notification from [*] of such actions, challenges, infringements, misappropriations, proceeding or [*] decision to abandon any such action. In such event, [*] shall have the option to respond, defend or prosecute such action [*], provided that [*] shall co-operate with and provide assistance to [*]. All amounts recovered from any Third Party shall be applied [*].

8.12 In the event that [*] and [*] mutually agree that it is desirable for [*] to acquire any Third Party patent or license in connection with the development or manufacture of the Compound or Product covered by the HMRI-Patents in the Territory then [*].

8.13 [*] recognises that [*] has reserved certain rights in [*] and that there may be a legitimate dispute between the parties whether a legal action should be brought against a Third Party which could affect [*] reserved rights [*] and [*] rights [*]. In the event that there is a dispute between [*] and [*] regarding [*] and therefore whether a legal action should be initiated, [*] and [*] shall submit the issue to [*]. If [*] and [*] cannot agree on [*], then [*] and [*] shall each [*]

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[*] That [*] and then [*] and [*] may decide [*] as described by this Article 8. The compensation to, and expenses of, such [*].

9. STATEMENTS AND REMITTANCES.

9.1 Vanda shall keep, and require its Affiliates and Sublicensees to keep complete and accurate records of all Net Sales of the Product under the sublicenses granted herein. HMRI and Novartis shall have the right, at their expense, through a certified public accountant or like independent person reasonably acceptable to Vanda, and following reasonable notice, to examine such records under conditions of confidentiality during regular business hours during the period of time during which royalties are due and payable hereunder and for [*] thereafter; provided, however, that such examination shall not take place more often than [*] and shall not cover such records for more than the preceding [*]; and provided further, that such accountant shall report to Novartis only as to the accuracy of the Net Sales computation and royalty statements and payments. It is agreed that if this Sublicense Agreement is terminated with respect to a particular country(ies), then Novartis' examination rights shall continue with respect to sales of the Product in such country(ies) only for a period of [*] after the termination of sublicense rights in that country. Copies of all such accountant's reports shall be supplied to Vanda.

9.2 Within [*] after the close of each [*], Vanda shall deliver to Novartis a true accounting of all Product sold by Vanda, its Affiliates and Sublicensees during such [*] and shall at the same time pay all earned royalties due. Such accounting shall show Net Sales of Product on a country-by-country and product-by-product basis and such other particulars as are reasonably necessary for accounting of the royalties payable hereunder.

9.3 Any tax paid or required to be withheld by Vanda on account of royalties payable by Vanda under this Sublicense Agreement shall be indicated on the accounting described in Section 9.2 hereof and deducted from the amount of royalties otherwise due. Vanda shall secure and send to Novartis or HMRI, as the case may be, proof of any such taxes withheld and paid by Vanda. Any [*] by Vanda or a Sublicensee shall be for the account of and paid by Vanda.

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9.4 Unless otherwise indicated herein, and subject to foreign exchange regulations then prevailing, to the extent free conversion from local currency to United States dollars is permitted, all payments and royalties payable under this Sublicense Agreement shall be paid in cash in U.S. dollars by wire transfer in accordance with Section 3.2 hereof. If governmental regulations prevent remittances from a foreign country with respect to sales made in that country, the obligation of Vanda to pay royalties on sales in that country shall be suspended until such remittances are possible, but such royalties shall accrue as accounts payable by Vanda to Novartis or HMRI, as the case may be. Novartis or HMRI, as the case may be, shall have the right, upon giving written notice to Vanda, to receive payment in that country in local currency.

9.5 Royalty payments and Net Sales shall be calculated on the basis of Vanda's quarterly standard account of internal sales which represents the conversion of all local currency sales for a calendar quarter into Swiss francs at the average exchange rate: (as routinely derived via Vanda's standard methodology) for such calendar quarter in which the sales are recorded. The exchange rate between the Swiss franc and the U.S. dollar for the quarterly royalty payments to Novartis or HMRI (as the case may be) shall be the exchange rates published in the Foreign Exchange column of The Wall Street Journal, New York edition, or other qualified source mutually acceptable to the parties on the last business day of the calendar quarter for which the royalties are being paid. Notwithstanding the foregoing, if there is a difference between any amount that Vanda pays to Novartis or HMRI (as the case may be) under Sections 3.3, 3.4 or 3.5, and the amount that Novartis is required to pay to Titan under the Titan Agreement (which difference arises as a result of using the method for calculating royalties that are due and payable under this Section 9.5, and the method for calculating such royalties under Section 9.5 of the Titan Agreement), the shortfall or excess (as the case may be) in royalty payments made by Vanda under this Section 9.5 shall be paid by Vanda to HMRI or Novartis (as the case may be) in the case of a shortfall, and by Novartis to Vanda in the case of an excess payment by Vanda to Novartis under Section 3.3 or 3.5.

10. TERM AND TERMINATION

10.1 (a) Vanda will have the right to terminate the sublicense for the Territory or on a country-by-country basis for [*] associated with the Product as reasonably determined by Vanda. For this purpose "[*]" are ones which [*].

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(b) In the event of termination in the entire Territory by Vanda pursuant to this Section 10.1, Vanda shall, within [*] of such termination, return to Novartis any and all information and data (including new information and data) relating to the Compound and Product, whether generated by or on behalf of Titan, Novartis, HMRI or Vanda, and make no further use thereof. Additionally, in such event, this Sublicense Agreement shall terminate in its entirety and the sublicense granted hereunder shall revert back to Novartis. Novartis shall retain all up front license fees and milestone payments it had received up to the date of termination if, and only if, termination was not due to any fraud, misrepresentations, omissions or falsifications of information with respect to such Know-How, information or data owned or controlled by HMRI, Titan, Novartis or their Affiliates as of the date hereof in which case, to the extent that Novartis has for its own part perpetrated a fraud, misrepresentation, omission or falsification of information with respect to such Know-How, information or data owned or controlled by it, Novartis shall repay to Vanda, within ninety-five (95) days of such termination, that portion of the up front license fee and milestone payments Novartis had received from Vanda up to the date of such termination. In no event shall Novartis be liable to Vanda for any misrepresentation, omission or falsification of information owned or controlled by HMRI or Titan or their Affiliates.

(c) Novartis may terminate this Sublicense Agreement by giving Vanda three months prior written notice in the event that the time period elapsing between patient dosing in clinical trials is greater than [*] or more than [*] elapses between the grant of first marketing authorization in the United States or a Major Market Country and the commercial launch of the Product in that country.

10.2 In the event the development of the Compound and Product is terminated altogether by Vanda on or before January 1, 2006, for reasons other than those described in Section 10.1, then this Sublicense Agreement shall terminate in its entirety and the sublicense granted hereunder shall revert back to Novartis. Novartis shall retain all up front license fees it had received up to the date of termination and Vanda shall also pay a [*] penalty payment to Novartis if, and only if, termination was not due to any fraud, misrepresentations, omissions or falsifications (of information owned or controlled by HMRI, Titan, Novartis or their Affiliates with respect to Know-How, information or data).

10.3 Unless otherwise terminated, this Sublicense Agreement shall expire on a country-by-country basis upon the expiration of Vanda's obligation to pay royalties under this Sublicense Agreement in each such country. Expiration of this Sublicense Agreement under this provision shall not preclude Vanda, its Affiliates and Sublicensees from continuing directly

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or indirectly to manufacture the Compound and market and sell Product and to use Know-How without further royalty payments.

10.4 In the event there is a change in the control of Vanda, Vanda shall give Novartis [*] and that the development and commercialisation of COMPOUND and PRODUCT will continue per the terms of this Sublicense Agreement.

10.5 (a) If either party materially defaults in its performance of this Sublicense Agreement and if such default is not corrected or if the party in default is not exercising reasonably diligent efforts to cure such default within [*] after receiving written notice from the other party with respect to such default, or if such default is not correctable within [*] then such other party shall have the right to terminate this Sublicense Agreement at the end of such period in its entirety by giving written notice to the party in default. In the event Vanda materially defaults in its performance under this Sublicense Agreement with respect to a particular country, then, subject to Section 11.4 hereof, Novartis' right to terminate shall be limited to termination of the sublicense granted hereunder in such country only.

(b) If Novartis materially defaults in its performance of the Sublicense Agreement, then Vanda shall have the right but not the obligation to correct or cure such default in the place of Novartis [*] provided for in Section 10.5 of the Titan Agreement without prejudice to any other rights Vanda may have under this Sublicense Agreement (including the right to recover amounts paid to Novartis), provided that (i) Vanda notifies Novartis in writing of Vanda's election to do so, and (ii) Vanda's correction or cure of such default does not increase Novartis' liability under the Sublicense Agreement.

(c) It is agreed that a material default by Novartis under the Titan Agreement shall be a material default by Novartis under this Sublicense Agreement.

10.6 Subject to applicable bankruptcy laws, either party may terminate this Sublicense Agreement if, at any time, the other party shall file in any court pursuant to any statute of the United States or of any individual state or foreign country, a voluntary petition in bankruptcy or insolvency or for reorganisation in bankruptcy or for an arrangement or the appointment of a receiver or trustee of the party or of its assets, or if the other party shall be served with an involuntary petition against it, filed in any insolvency proceeding, and such petition shall not be dismissed within ninety (90) days after the filing thereof, or if the other party shall propose or be a party to any dissolution, or if the other party shall make an assignment for the benefit of creditors.

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(a) Without limitation, Vanda's rights under this Sublicense Agreement shall include those rights afforded by 11 U.S.C. Section 365(n) of the United States Bankruptcy Code and any successor thereto (the "Code"). If the bankruptcy trustee of Novartis as a debtor or debtor-in-possession rejects this Sublicense Agreement under 11 U.S.C. Section 365(n) of the Code, Vanda may elect to retain its rights sublicensed from Novartis hereunder (and any other supplementary agreements hereto) for the duration of this Sublicense Agreement and avail itself of all rights and remedies to the full extent contemplated by this Sublicense Agreement and 11 U.S.C. Section 365(n) of the Code, and any other relevant sections of the Code and other relevant non-bankruptcy law.

11. RIGHTS AND DUTIES UPON TERMINATION.

11.1 Upon termination of this Sublicense Agreement (other than for Novartis' breach), Novartis shall have the right to retain any sums already paid by Vanda hereunder, and Vanda shall pay all sums accrued hereunder which are then due except as otherwise defined in this Sublicense Agreement.

11.2 Upon early termination of this Sublicense Agreement in its entirety or with respect to any country, under Sections 10.1 or 11.6 or due to a breach hereof by Vanda, Vanda shall notify Novartis of the amount of Product that Vanda, its Affiliates and Sublicensees then have on hand for sale in each country, the sale of which would, but for the termination, be subject to royalty, and Vanda, its Affiliates and Sublicensees shall thereupon be permitted to sell that amount of Product, provided that Vanda shall pay the royalty thereon to Novartis, or HMRI, as the case may be, at the time provided for.

11.3 Expiration or termination of this Sublicense Agreement or termination on a country-by-country basis shall terminate all outstanding obligations and liabilities between the parties arising from this Sublicense Agreement except those described in Sections 6.2 (with sole respect to Novartis confidentiality) 6.3, 6.4, 6.5, 6.6, 6.8, 9.1, 9.2, 10.1, 10.2, 10.3, 11.1, 11.2, 11.4, 11.5, 11.6, 12.5, 12.6, 12.7, 14.1 and 14.2, which sections shall survive such termination. In addition, any other provision required to interpret and enforce the parties' rights and obligations under this Sublicense Agreement shall also survive, but only to the extent required for the full observation and performance of the surviving obligations under this Sublicense Agreement.

11.4 Except as otherwise specifically provided for herein, termination, in whole or in part, of the Sublicense Agreement in accordance with the provisions hereof shall not limit remedies to the parties which may be otherwise available in law or equity, including consequential,

incidental or indirect damages (such as loss of sales, profits, or goodwill) arising out of a party's performance or nonperformance under this Sublicense Agreement.

11.5 Subject to Section 11.2 and other express provisions hereof, upon early termination of this Sublicense Agreement in its entirety due to breach hereof by Vanda or pursuant to Sections 10.1, 10.2 or 11.6, Vanda's rights in the Compound and Product shall cease, Vanda, its Affiliates and Sublicensees shall cease manufacture, development, marketing and sale of the Compound and Product in the Territory, and all originals and copies of Know-How, data, results and other information collected and/or generated by Vanda, its Affiliates and Sublicensees relating to the Compound or Product prior to termination shall be delivered to Novartis within [*] thereafter, except for one copy thereof which may be retained in Vanda's legal or other appropriately restricted files solely for the purpose of establishing the extent of its obligations hereunder. Any IND or other regulatory filing effected prior to termination shall be assigned by Vanda to Novartis (or its designee(s), which designee may be HMRI or Titan), [*], if not already assigned to Novartis. Vanda shall provide to Novartis, within [*] of Novartis' request, copies of all regulatory correspondence, including, but not limited to, IND Information Amendments, IND Reports, IND Safety Reports, NDA submission, NDA Postmarketing Reports, and reports of written/phone contacts to and from regulatory agencies, as well as the safety database for the Product.

11.6 If (a) Vanda is precluded from selling the Product in a particular country in the Territory by virtue of infringement of Third Party patent rights, or (b) there is a holding of invalidity or unenforceability of any Patent, from which no further appeal can be taken, that materially affects Vanda's ability to commercialise the Product in a particular country in the Territory, Vanda shall have the right but not the obligation to terminate this Sublicense Agreement in such country. At Vanda's option, this Sublicense Agreement may be terminated in its entirety if the events described in subsection (a) or (b) of this Section 11.6 occur in either the United States or two of the Major Market Countries. Within [*] of any such termination, subject to the following sentence, Novartis shall repay to Vanda if the Sublicense Agreement has been terminated in its entirety, that portion of the up front license fee and milestone payments it has received from Vanda up to the date of termination. In the event that the Sublicense Agreement is terminated pursuant to Section 11.6 of the Sublicense Agreement, Novartis shall be obligated to make the foregoing repayments to Vanda, but only to the extent that it has been repaid its own up-front license fee and milestone payments due to Novartis under Section 11.6 of the Titan Agreement. If this Sublicense Agreement has been terminated only with respect to certain country(ies), the parties shall negotiate in good faith a smaller portion of the upfront license fee and milestone payments Novartis has received from Vanda up to such date which shall be repaid to Vanda; provided, however, if

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the Titan Agreement has been terminated only with respect to such certain countries under Section 11.6 of the Titan Agreement, Novartis shall be obligated to make such repayments to Vanda but only to the extent Novartis has been repaid the corresponding portion of the up front license fee and milestone payments owed to it pursuant to Section 11.6 of the Titan Agreement. If the parties are unable to agree on such smaller portions within ninety (90) days, the issue shall be submitted for determination by arbitration in accordance with Section 14.2.

12. WARRANTIES INDEMNIFICATIONS AND REPRESENTATIONS

12.1 Novartis represents and warrants that to the best of its knowledge at the date of this Sublicense Agreement:

(a) all currently issued or pending patents and patent applications owned or controlled by HMRI or its Affiliates or its Sublicensees claiming the Compound or Product, are listed in Appendix A;

(b) HMRI or its Affiliates or its Sublicensees own or control the entire right, title and interest in Patents and Know-How. If Novartis becomes aware of any patents or patent applications owned or controlled by HMRI or its Affiliates or Sublicensees claiming the Compound or Product or manufacture, formulation or use thereof, not listed in Appendix A and is within the rights granted to Vanda in this Sublicense Agreement, such patents and patent applications shall be added to Appendix A at no cost to Vanda. Novartis further represents and warrants that to the best of its knowledge as of the date of this Sublicense Agreement;

(c) the Titan Agreement is in full force and effect and neither HMRI nor Titan nor Novartis is in default of any of their obligations thereunder;

(d) subject to obtaining HMRI's and Titan's prior written consent, each of which has been obtained, Novartis has the legal power, right and authority to enter into this Sublicense Agreement; and

(e) Novartis has not previously assigned, transferred, conveyed or otherwise encumbered its right, title and interest in the Patents or Know-How.

Vanda represents and warrants that it has the legal power, right and authority to enter into this Sublicense Agreement.

12.2 Nothing in this Sublicense Agreement shall be construed as a warranty that the Patents are valid or enforceable or that their exercise does not infringe any patent rights of Third Parties. Novartis hereby represents and warrants that it has no present knowledge (except as disclosed to Vanda or as available to Vanda from public information) that (i) the Patents are invalid or unenforceable, (ii) the exercise of Patents infringes any patent rights of Third Parties, and (iii) Third Party licenses are necessary for the development, manufacture or commercialisation of the Compound or Product. [*]

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of any Patent, from which no further appeal is or can be taken, shall not affect any obligation already accrued hereunder, but shall only eliminate future royalties otherwise due under such Patent from the date such holding becomes final.

12.3 Each party represents and warrants to the other that it is not currently debarred, suspended or otherwise excluded by any U.S. Government agencies from receiving federal contracts.

12.4 Vanda represents and warrants that during the term of this Sublicense Agreement, neither it, an Affiliate or a Sublicensee shall license, develop, have developed, manufacture, have manufactured, sell or have sold any of the following compounds or products classified as an atypical antipsychotic: [*].

In the event that Vanda or a Sublicensee undertakes any of the foregoing actions within the EEA, then Novartis may not terminate this Sublicense Agreement or seek damages or equitable remedies for such actions, but may at its option by notice to Vanda (i) terminate the Exclusive nature of the licenses granted pursuant to Article 2 hereof in the EEA, so that all use of Patents and Know-How in the EEA will thereafter be on a non-exclusive basis at a reduced royalty rate to be negotiated at time of change in exclusivity; (ii) cease providing improvements to Vanda pursuant to Section 2.3; and/or (iii) require Vanda to prove to Novartis' reasonable satisfaction that the Know-How is not being used for such activities. Notwithstanding the foregoing, Novartis and Vanda agree that in the event Vanda acquires rights to one or more of the [*] compounds or products listed in the first paragraph of this Section 12.4 (the "Acquired Compounds or Products") as part of a corporate transaction Novartis shall use its good faith efforts to cause HMRI and Titan to waive any rights that it may have against Vanda or Novartis under this Section 12.4 and Section 12.4 of the Titan Agreement. To assist Novartis in obtaining such waiver from HMRI, Vanda will provide Novartis with arguments supporting how Vanda intends to prevent the Products from being negatively impacted by the Acquired Compounds or Products. In the event that HMRI or Titan will not waive such rights and Vanda does not agree to divest the Acquired Compounds or Products or, alternatively, sublicense the Product to a mutually acceptable Third Party (which third party must also be acceptable to HMRI and Titan), Novartis agrees that its sole and exclusive remedy against Vanda shall be to terminate the Exclusive nature of the Sublicense Agreement in the EEA as provided for in this Section 12.4, and to terminate this Sublicense Agreement elsewhere in the Territory.

12.5 Vanda shall indemnify, defend and hold Novartis, HMRI, Titan and their respective Affiliates harmless from and against any and all liabilities, claims, demands, damages, costs,

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expenses, fines, penalties or money judgments including without limitation court costs and reasonable attorney's fees (hereinafter referred to as "Liabilities"), during the term of this Sublicense Agreement and after its expiration or termination, incurred by or rendered against Novartis, Titan, HMRI and their respective Affiliates which arise out of [*], except to the extent that such Liabilities are directly attributable to the breach of this Sublicense Agreement by Novartis or breach of the Titan Agreement by HMRI or Titan (including without limitation any breach of Novartis' representations or warranties under this Sublicense Agreement or any breach of HMRI's or Titan's representations or Warranties under the Titan Agreement) or any negligence or misconduct by Novartis, Titan or HMRI. Vanda shall also indemnify, defend and hold Novartis, Titan, HMRI and their respective Affiliates harmless from and against any and all Liabilities incurred by or rendered against Novartis, Titan, HMRI and their respective Affiliates which arise out of [*] from and after the Effective Date of this Sublicense Agreement, whether such contracts or arrangements with Third Parties were entered into prior to or following the Effective Date of this Sublicense Agreement, except to the extent that such Liabilities are directly attributable to the breach of this Sublicense Agreement by Novartis or breach of the Titan Agreement by HMRI or Titan (including without limitation any breach of Novartis' representations or Warranties under this Sublicense Agreement or any breach of HMRI's or Titan's representations or warranties under the Titan Agreement) or any negligence or misconduct by Novartis, Titan or HMRI.

12.6 Novartis shall indemnify, defend and hold Vanda, its Affiliates and Sublicensees harmless from and against any and all Liabilities (as defined in Section 12.5 hereof), incurred by or rendered against Vanda, its Affiliates and Sublicensees, which arise out of [*], except to the extent that such Liabilities are directly attributable to the breach of this Sublicense Agreement by a third party (including without limitation any breach of Novartis' representations and warranties under this Sublicense Agreement), or any negligence or misconduct by Vanda, HMRI or Titan. Novartis shall also indemnify, defend and hold Vanda, its Affiliates and Sublicensees harmless from and against any and all Liabilities incurred by or rendered against Vanda, and its Affiliates and Sublicensees which arise out of

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12.7 Each party shall give the other prompt notice in writing of any claim or demand referred to in Sections 12.5 or 12.6. In addition, the obligations of any indemnifying party shall be subject to the indemnified party fulfilling the following obligations:
(a) With respect to third party claims, indemnified party shall fully cooperate with the indemnifying party in the defense of such claim or demand which defense shall be controlled by the indemnifying party; and
(b) With respect to third party claims, indemnified party shall not, except at its own cost, voluntarily make any payment or incur any expense with respect to any claim, demand or suit (including without limitation retaining its own counsel) without the prior written consent of the indemnifying party, which such party shall not be required to give.

13. FORCE MAJEURE.

13.1 If the performance of any part of this Sublicense Agreement by either party, or if any obligation under this Sublicense Agreement, is prevented, restricted, interfered with or delayed by reason of any cause beyond the reasonable control of the party required to perform, the party so affected, upon giving written notice and written evidence of such force majeure to the other party, shall be excused from such performance to the extent of such prevention, restriction, interference or delay, provided that the affected party shall use its reasonable commercial efforts to avoid or remove such causes of non-performance and shall continue performance with the utmost dispatch whenever the force majeure is removed. In the event of a force majeure, the parties shall also discuss whether modification of the terms of this Sublicense Agreement are necessary to alleviate the hardship or loss caused by the force majeure.

14. GOVERNING LAW AND ARBITRATION.

14.1 This Sublicense Agreement shall be deemed to have been made in the State of New York and its form, execution, validity, construction and effect shall be determined in

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accordance with the laws of the State of New York (without regard to New York's or any other jurisdiction's choice of law principles).

14.2 In the event of any controversy or claim arising out of or relating to any provision of this Sublicense Agreement, the parties shall try to settle their differences amicably between themselves. Any unresolved disputes arising between the parties relating to, arising out of or in any way connected with this Sublicense Agreement or any term or condition hereof, or the performance by either party of its obligations hereunder, whether before or after termination of this Sublicense Agreement, shall be resolved by final and binding arbitration. Whenever a party shall decide to institute arbitration proceedings, it shall give written notice to that effect to the other party. Except in the case of a determination to be made where payments are to be made to by one party to the other, the party giving such notice shall refrain from instituting the arbitration proceedings for a period of [*] following such notice to allow the parties time to further attempt to come to an amicable resolution of the dispute. Arbitration shall be held in New York City, New York according to the commercial rules of the American Arbitration Association ("AAA"). The arbitration will be conducted by a panel of three arbitrators appointed in accordance with AAA rules; provided, however, that each party shall within [*] after the institution of the arbitration proceedings appoint a party arbitrator, and the party-arbitrators shall select a neutral arbitrator, to be chairman of the arbitration panel, within [*] thereafter. If the party-arbitrators are unable to select a neutral within such period, the neutral shall be appointed in accordance with AAA rules. All arbitrator(s) eligible to conduct the arbitration must agree to render their opinion(s) within [*] of the final arbitration hearing. No arbitrator (nor the panel of arbitrators) shall have the power to award punitive damages under this Sublicense Agreement and such award is expressly prohibited. Decisions of the arbitrator(s) shall be final and binding an all of the parties. Judgment on the award so rendered may be entered in a court having jurisdiction thereof. In any arbitration pursuant to this Sublicense Agreement, the arbitrators shall interpret the express terms hereof and apply the laws of the State of New York. [*]. Notwithstanding the provisions of this clause, either party may seek preliminary or injunctive measures or relief in any competent court having jurisdiction.

15. SEPARABILITY

15.1. In the event any portion of this Sublicense Agreement not material to the remaining portions shall be held illegal, void or ineffective, the remaining portions hereof shall remain in full force and effect.

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15.2 If any of the terms or provisions of this Sublicense Agreement are in conflict with any applicable statute or rule of law, then such terms or provisions shall be deemed inoperative to the extent that they may conflict therewith and shall be deemed to be modified to conform with such statute or rule of law.

15.3 In the event that the terms and conditions of this Sublicense Agreement are materially altered as a result of Sections 15.1 or 15.2, the parties shall renegotiate the terms and conditions of this Sublicense Agreement so as to accomplish as nearly as possible the original intentions of the parties.

16. ENTIRE AGREEMENT

16.1 This Sublicense Agreement and the Appendices attached hereto, entered into as of the date written above, constitutes the entire agreement between the parties relating to the subject matter hereof and supersedes all previous writings and understandings, including the Confidentiality Agreement between the parties dated June 16,2003 (it being understood and agreed that all Confidential Information of HMRI, Titan and Novartis disclosed to Vanda prior to the Effective Date of this Sublicense Agreement shall be subject to Sections 6.4,6.6, 6.7 and 6.9 of this Sublicense Agreement). No terms or provisions of this Sublicense Agreement shall be varied or modified by any prior or subsequent statement, conduct or act of either of the parties, except that the parties may amend this Sublicense Agreement by written instruments specifically referring to and executed in the same manner as this Sublicense Agreement. Any amendments to this agreement require the prior written approval of Titan and HMRI, which approval will not be unreasonably withheld.

17. NOTICES

17.1 Any notice required or permitted under this Sublicense Agreement shall be in writing and in English and shall be sent by airmail, postage prepaid, or facsimile or courier to the following address of each party or to such other address as may be designated in writing by the respective parties:

If to NOVARTIS:
Novartis Pharma AG
[*]
Basel
Switzerland
Facsimile: [*]

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[*] CERTAIN INFORMATION ON THIS PAGE HAS BEEN OMITTED AND FILED SEPARATELY WITH THE COMMISSION. CONFIDENTIAL TREATMENT HAS BEEN REQUESTED WITH RESPECT TO THE OMITTED PORTIONS.

Attention: [*]

With a copy to:
[*]
Novartis Pharma AG
[*]
Basel
Switzerland
Attention: [*]

If to Vanda:
Vanda Pharmaceuticals Inc.
[*]
Princeton, NJ 08542
Attn: [*]

17.2 Any notice required or permitted to be given concerning the Sublicense Agreement or HMRI Agreement shall be effective upon receipt by the party to whom it is addressed.

If to TITAN:
Titan Pharmaceuticals, Inc.
[*]
South San Francisco, CA 94080
Attention: [*]
Telephone: [*]
Facsimile: [*]

With a copy to:
Titan Pharmaceuticals, Inc.
[*]
South San Francisco, CA 94080
Attention: [*]
Telephone: [*]
Facsimile: [*]
and
Loeb & Loeb LLP

- ----------
[*] CERTAIN INFORMATION ON THIS PAGE HAS BEEN OMITTED AND FILED SEPARATELY WITH THE COMMISSION. CONFIDENTIAL TREATMENT HAS BEEN REQUESTED WITH RESPECT TO THE OMITTED PORTIONS.

[*]
New York, New York 10154
Attn: [*]
Phone: [*]
Facsimile: [*]
e-mail: [*]

If to HMRI:
Aventis Inc.
[*]
Bridgewater, NJ 08807-0890
Facsimile: [*]
Attn: [*]

With copies to:
Aventis Inc.
[*]
Bridgewater, NJ 08807-0890
Facsimile: [*]
Attn: [*]

For safety and Adverse Event Reporting:
AVENTIS Inc.
[*]
Bridgewater, NJ 08807-0890
USA
Fax: [*] Phone: [*]
Email: [*]

With copies to:
AVENTIS Inc.
[*]

- ----------
[*] CERTAIN INFORMATION ON THIS PAGE HAS BEEN OMITTED AND FILED SEPARATELY WITH THE COMMISSION. CONFIDENTIAL TREATMENT HAS BEEN REQUESTED WITH RESPECT TO THE OMITTED PORTIONS.

[*]
Bridgewater, NJ 08807-0890
USA
Phone: [*]
Email: [*]
And,
AVENTIS Inc.
[*]
Bridgewater, NJ 08807-0890
USA
Fax: [*]
Phone: [*]
Email: [*]

18. ASSIGNMENT

18.1 This Sublicense Agreement or any portions thereof and the sublicenses herein shall be binding upon and inure to the benefit of the successors in interest and assignees of the respective parties.

18.2 Vanda may assign this Sublicense Agreement to an Affiliate without the prior written consent of Novartis, and in such event Vanda will continue to guarantee the obligations of such Affiliate hereunder. Subject to the foregoing, Vanda shall not have the right to assign this Sublicense Agreement to any Third Party without the prior written consent of Novartis, Titan and HMRI, such consent not to be unreasonably withheld; provided, however, that no such consent shall be required in connection with an assignment in connection with any event referred to in Section 18.3 below.

18.3 In the event of a consolidation, merger, acquisition which involves a change in control of Vanda, this Sublicense Agreement shall remain in full force and effect, and Vanda agrees to notify Novartis, Titan and HMRI. Consolidation, mergers and/or acquisitions to which

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Vanda is a party which do not involve a change in control of Vanda shall not require such notice.

18.4 In order for any assignment by Vanda of this Sublicense Agreement (which is permitted by this Sublicense Agreement) to be valid, the assignee of such assignment shall assume and agree to be bound by the provisions hereof.

19. FAILURE TO ENFORCE

19.1 The failure of either party to enforce at any time any provisions hereof shall not be construed to be a waiver of such provision nor of the right of such party thereafter to enforce each and every such provision.

20. AGENCY

20.1 Except as expressly set forth in this Sublicense Agreement, nothing in this Sublicense Agreement authorizes either party to act as agent for the other or, as to any third party, to indicate or imply the existence of any such agency relationship. The relationship between the parties is that of independent contractors.

21. FURTHER ASSURANCES

21.1 Each party hereto agrees to execute, acknowledge and deliver such further instruments, and to do all such other acts, as may be necessary or appropriate in order to carry out the purposes and intent of this Sublicense Agreement.

22. CAPTIONS

22.1 Captions are inserted for convenience only and in no way are to be construed to define, limit or affect the construction or interpretation hereof.

23. MISCELLANEOUS

23.1 Both parties agree to discuss matters arising during the term of this Sublicense Agreement in the spirit of co-operation and good faith and endeavour to resolve any differences by mutual agreement whenever possible. If the parties fail to reach agreement, either party may submit the matter for resolution pursuant to Section 14.2.

23.2 HMRI and its Affiliates shall be third party beneficiaries under this Sublicense Agreement to the extent that this Sublicense Agreement inures to the benefit of HMRI, with respect to Sections 2.1(a), 2.4, 2.5, 2.7, 2.9(a), 2.9(d), 2.10, 3.4(a), 3.5, 4.1(a), 4.2, 4.3, 5.2, 5.3, 5.5, 6.3, 6.4, 6.7, 8.1, 8.2, 8.4, 8.5, 8.6, 8.7, 8.9, 8.10, 8.11, 8.12, 8.13, 9.1, 9.3, 9.4, 9.5, l0.1(b), 11.5, 12.5, 17.2, 18.2, 18.3, 18.4,23.2 and 23.3 with all rights and remedies associated therewith.

23.3 Vanda covenants to Novartis that during the term of this Sublicense Agreement, Vanda, its Affiliates and Sublicensees shall not violate the Federal Foreign Corrupt Practices Act in the performance of its negotiations or obligations hereunder.

***[Remainder of page intentionally left blank - signature page follows]***

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their duly authorized representatives as of the Effective Date.

VANDA PHARMACEUTICALS, INC.

By: /s/ Mihael Polymeropoulos
---
Mihael Polymeropoulos
Chief Executive Officer

NOVARTIS PHARMA AG

By: /s/ Herve Girsault
---
Name: Herve Girsault
Title: Head, Global Partnering
Business Development & Licensing

By: /s/ Tom Chakraborti
---
Name: Tom Chakraborti
Title: Senior Legal Counsel

List of Appendices

| | |
|---|---|
| Patents and Patent Applications | Appendix A |
| blank | Appendix B |
| blank | Appendix C |
| blank | Appendix D |
| blank | Appendix E |
| blank | Appendix F |
| Titan Agreement | Appendix G |

APPENDIX A

HMRI PATENTS AND PATENT APPLICATIONS

[*]

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[*] CERTAIN INFORMATION ON THIS PAGE HAS BEEN OMITTED AND FILED SEPARATELY WITH THE COMMISSION. CONFIDENTIAL TREATMENT HAS BEEN REQUESTED WITH RESPECT TO THE OMITTED PORTIONS.

[*]

[*]

[*]

BLANK

BLANK

BLANK

CRO CONTRACTS

NONE

SPECIAL COUNTRIES

TITAN AGREEMENT

[*]

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[*] CERTAIN INFORMATION ON THIS PAGE HAS BEEN OMITTED AND FILED SEPARATELY WITH THE COMMISSION. CONFIDENTIAL TREATMENT HAS BEEN REQUESTED WITH RESPECT TO THE OMITTED PORTIONS.

ADDENDUM TO SUBLICENSE AGREEMENT

between

NOVARTIS PHARMA AG

and

VANDA PHARMACEUTICALS, INC.

This Addendum is part of the SUBLICENSE AGREEMENT that became effective on the 4th day of June, 2004, between Vanda Pharmaceuticals, Inc., a corporation organized and existing under the laws of the State of Delaware and having its principal office at 47 Hullfish Street, Suite 310, Princeton, NJ 08542 ("Vanda"), and Novartis Pharma AG, a corporation organized under the laws of Switzerland and having its principal office at Lichstrasse 35, CH-4056, Basel, Switzerland ("Novartis").

EXCHANGE OF INFORMATION AND CONFIDENTIALITY

The parties agree to be bound to the following terms, and hereby incorporate them into the Sublicense Agreement.

1.0 Privacy and Security of Pharmacogenetic samples and data

Vanda agrees that all pharmacogenetic information that it receives in connection with this agreement, including any DNA samples and/or animal tissues treated with the compound that may be provided for further studies in accordance with the Sublicense Agreement terms, as well as any raw data and individual clinical genetic data and information, will be maintained in a confidential and secure manner, in full compliance with applicable United States (federal and state), European Union, and other country specific regulations for privacy and security of genetic data and samples and personally identifiable health information, and will only be used and/or disclosed in accordance with those regulations. Vanda also agrees to ensure that any of its affiliates, agents, vendors or other business partners who receive any identifiable genetic information or data from Vanda relating to the compound, shall adhere to the same standards of privacy and security mandated by this Addendum and the Sublicense Agreement.

2.0 Privacy and Security of Adverse Event information.

Vanda agrees that all personally identifiable adverse event information that it receives in connection with this agreement, including spontaneous adverse event report forms from Novartis, will be maintained in a confidential and secure manner, in full compliance with applicable United States (federal and state), European Union, and country specific regulations for privacy and security of personally identifiable health information, including any specific requirements that may apply to adverse event reporting information, and will only be used or disclosed in accordance with those regulations. Vanda also agrees to ensure that any of its affiliates, agents, vendors or other business partners (excluding health authorities) who receive any identifiable adverse event information from Vanda relating to the compound, shall adhere to the same standards of privacy and security mandated by this Addendum and the Sublicense Agreement.

3.0 Compliance with Informed Consents.

Vanda will assume all obligations of Novartis contained in the informed consents with the individual participants in the studies transferred to Vanda. In case only the genetic information or study data of such studies is transferred to Vanda, Vanda will comply with any request by Novartis pursuant to a disclosure, deletion or destruction request received by Novartis from an individual participant of such study.

4.0 Indemnification

Vanda agrees to indemnify and hold harmless Novartis for damages and legal fees that may result from [*]. Vanda shall also provide written notification to Novartis of any claim against Vanda relating to [*], within [*] of receipt of such claim, lawsuit or notification. Vanda agrees that Novartis shall be permitted to select counsel of its own choosing in the event that a claim or lawsuit is filed that impacts Novartis' interests.

*** Remainder of page intentionally left blank, signature page to follow ***

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IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their duly authorized representatives as of the Effective Date.

VANDA PHARMACEUTICALS, INC.

By: /s/ Chip Clark
---
Name: Chip Clark
Title: Chief Business Officer

NOVARTIS PHARMA AG

By: /s/ Herve Girsault
---
Name: Herve Girsault
Title: Head, Global Partnering
Business Development & Licensing

By: /s/ Kimberly J. Urdahl
---
Name: Kimberly J. Urdahl
Title: Head of Legal, Primary Care

Exhibit 10.3

==========

AMENDED AND RESTATED LICENSE, DEVELOPMENT AND COMMERCIALIZATION AGREEMENT

BY AND BETWEEN

BRISTOL-MYERS SQUIBB COMPANY
(A DELAWARE CORPORATION)

AND

VANDA PHARMACEUTICALS, INC.
(A DELAWARE CORPORATION)

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(continued)

# AMENDED AND RESTATED LICENSE, DEVELOPMENT AND COMMERCIALIZATION AGREEMENT

THIS AMENDED AND RESTATED LICENSE, DEVELOPMENT AND COMMERCIALIZATION AGREEMENT (this "Agreement"), effective as of the Effective Date (defined below), is made and entered into by and between BRISTOL-MYERS SQUIBB COMPANY, a Delaware corporation headquartered at 345 Park Avenue, New York, New York 10154 USA ("BMS") and VANDA PHARMACEUTICALS, INC., a Delaware corporation having its principal place of business at 47 Hulfish Street, Suite 310, Princeton, NJ 08542 ("Vanda"). Each of BMS and Vanda is referred to herein as a "Party" and BMS and Vanda are collectively referred to herein as the "Parties."

## ARTICLE 1
## DEFINITIONS

For the purposes of this Agreement, the following definitions shall apply, and the terms defined herein in plural shall include the singular and vice-versa:

1.1 "AFFILIATE" means any corporation, company, partnership, joint venture and/or firm which controls, is controlled by, or is under common control with a specified person or entity. For purposes of this Section 1.1, "control" means the power, direct or indirect, to direct the management and policies of an entity, and shall be presumed to exist if one of the following conditions is met: (a) in the case of corporate entities, direct or indirect ownership of at least fifty percent (50%) of the stock or shares having the right to vote for the election of directors, and (b) in the case of non-corporate entities, direct or indirect ownership of at least fifty percent (50%) of the equity interest with the power to direct the management and policies of such non-corporate entities. The Parties acknowledge that in the case of certain entities organized under the laws of certain countries outside of the United States, the maximum percentage ownership permitted by law for a foreign investor may be less than fifty percent (50%), and that in such cases such lower percentage shall be substituted in the preceding sentence, provided that such foreign investor has the power to direct the management and policies of such entity. Care Capital LLC shall not be considered an Affiliate of Vanda and shall be considered a Third Party if and only if Care Capital LLC (a) is not involved in the Development, manufacture or Commercialization of a Product and (b) does not Control any know-how or patent relating to any composition, formulation, method of use or manufacture of a Compound or a Product that is not Controlled by Vanda and Vanda's Affiliates (i.e., Care Capital does not Control any know-how or patent that would be subject to Section 13.4.1(g) if Care Capital LLC was considered an Affiliate of Vanda).

1.2 "APPROVAL" means Marketing Authorizations with pricing, labeling, and reimbursement approvals and any other similar final approvals from the FDA or an

equivalent Regulatory Authority of another country necessary to manufacture and/or Commercialize a Product.

1.3 "BMS COMPOUND PATENT RIGHTS" means (a) all U.S. patents and patent applications and their foreign counterparts Controlled by BMS as of the Effective Date covering the composition or utility of a Compound; (b) any continuation, continuation-in-part (but only to the extent that such application includes new data in support of claims previously submitted in a prior originally filed application), divisional, and continued- prosecution applications of any such patent applications in (a), and (c) any patents granted on or issuing from any aforesaid applications in (a) and (b), including any renewals, extensions, patents of addition, revivals, re-examinations, and reissues thereof. Such Patent Rights are listed on Schedule 1.3.

1.4 "BMS COMPOUND KNOW-HOW" means all technical information and know-how known to and Controlled by BMS, Effective Date (including, without limitation, all biological, chemical, pharmacological, toxicological, clinical, assay, and related know-how and trade secrets) identified by BMS as directly relating to, and are reasonably useful for, the Development and/or Commercialization of a Compound or Product in the manner that the Compound or Product has been Developed and Commercialized by BMS heretofore.

1.5 "BMS KNOW-HOW" means the BMS Compound Know-How and the BMS Manufacturing Know-How.

1.6 "BMS MANUFACTURING KNOW-HOW" means all technical information and know-how known to and Controlled by BMS as of the Effective Date (including, without limitation, all manufacturing data, the percentages and specifications of ingredients, the manufacturing processes, specifications, technology, assays, quality control and testing procedures, and related know-how and trade secrets) identified by BMS as directly relating to, and are reasonably useful for, the manufacture of a Compound or Product in the manner that the Compound or Product has been manufactured by BMS heretofore.

1.7 "BMS MANUFACTURING PATENT RIGHTS" means those U.S. or foreign patents, if any, Controlled by BMS as of the Effective Date, including any renewals, extensions, patents of addition, revivals, re-examinations, and reissues thereof, for which any claim covers the manufacture of a Compound in the same manner that such Compound has heretofore been manufactured by BMS. Such patent rights are listed on Schedule 1.7.

1.8 "BMS PATENT RIGHTS" means the BMS Compound Patent Rights and the BMS Manufacturing Patent Rights.

1.9 "BUSINESS DAY" means a day other than Saturday, Sunday or any day on which commercial banks located in New York are authorized or obligated by law to close.

1.10 "COMBINATION PRODUCT" means a Product including [*]. For clarity, drug delivery vehicles, adjuvants,

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and excipients shall not be deemed to be "active ingredients" the presence of which in a Product would be deemed to create a Combination Product.

1.11 "COMMERCIALIZING PARTY" has the meaning set forth in Section 6.1.1.

1.12 "COMPOUNDS" means the compounds identified as BMS-214778 and BMS-330446 each as specifically described in Schedule 1.3 and including without limitation metabolites or prodrugs thereof, and any hydrates, conjugates, salts, esters, isomers, polymorphs or analogues of any of the foregoing.

1.13 "COMMERCIALLY REASONABLE EFFORTS" means, with respect to a Product, the carrying out of obligations [*], based on conditions then prevailing. Commercially Reasonable Efforts requires that each Party: (a) [*] (b) [*] (c) [*] and (d) [*].

1.14 "COMMERCIALIZATION" or "COMMERCIALIZE" means activities directed to obtaining pricing and reimbursement approvals, marketing, promoting, distributing, importing or selling a product

1.15 "CONFIDENTIAL INFORMATION" means all trade secrets, processes, formulae, data, know-how, improvements, inventions, chemical or biological materials, techniques, marketing plans, strategies, customer lists, or other information that has been created, discovered, or developed by a Party, or has otherwise become known to a Party, or which proper rights have been assigned to a Party, as well as any other information and materials that are deemed confidential or proprietary to or by a Party (including, without limitation, all information and materials of a Party's customers and any other third party and their consultants), regardless of whether any of the foregoing are marked "confidential" or "proprietary" or communicated to the other by the disclosing Party in oral, written, graphic, or electronic form. In the case of BMS, "Confidential Information" shall include, without limitation, the BMS Know-How.

1.16 "CONTROLLED" OR "CONTROLS", when used in reference to intellectual property, shall mean the legal authority or right of a Party hereto (or any of its Affiliates) to grant a license or sublicense of intellectual property rights to another Party, or to otherwise disclose proprietary or trade secret information to such other Party, without breaching the terms of any agreement with a Third Party, infringing upon the intellectual property rights of a Third Party, or misappropriating the proprietary or trade secret information of a Third Party.

1.17 "DEVELOPMENT" means non-clinical and clinical drug development activities reasonably related to the development and submission of information to a Regulatory Authority, including without limitation toxicology, pharmacology and other discovery efforts, test method development and stability testing, process development, formulation development, delivery system development, quality assurance and quality control development, statistical analysis, clinical studies (including pre- and post- approval studies and specifically excluding regulatory activities directed to obtaining pricing and reimbursement approvals). When used as a verb, "Develop" means to engage in Development.

1.18 "DEVELOPMENT COSTS" means costs incurred by each Party that were reasonably necessary for, and that reasonably relate to, the Development of a Product in accordance with this Agreement and the Development Plan for that Product, including, without limitation, (a) all [*] costs [*] incurred, (b) the costs of "[*]" (c) [*] (d) [*] and (e) [*] costs [*].

1.19 "DEVELOPMENT PLAN" means the drug development plan for a Product mutually agreed to in writing by the Parties, and as it may be amended by mutual written agreement from time to time. It shall include, among other things, budgets for Development of the Product that are planned to be conducted to achieve each step towards preparation of an NDA for use of the Product in the Field. The preliminary Development Plan for a Product containing the Compound identified as BMS-214778 is attached hereto as Schedule 1,19.

1.20 "DOLLAR" means the lawful currency of the United States of America.

1.21 "EFFECTIVE DATE" means February 25, 2004.

1.22 "FDA" means the U.S. Food and Drug Administration or its successor agency.

1.23 "FIELD" means the application to any human disease, disorder or condition, including without limitation sleep disorders such as insomnia and disorders of circadian rhythm.

1.24 "FIRST COMMERCIAL SALE" means, with respect to any Product, the first sale for use or consumption by the general public of such Product in any country in the

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Territory after Marketing Authorization has been granted, or otherwise permitted, by the governing health authority of such country.

1.25 "FTE RATE" means [*].

1.26 "IND" means an Investigational New Drug Application, as defined in the United States Federal Food, Drug and Cosmetic Act filed with the FDA or its foreign counterparts.

1.27 "INDEMNIFICATION CLAIM" has the meaning set forth in Section 12.1.

1.28 "JOINT INVENTIONS" has the meaning set forth in Section 10.1.

1.29 "LOSSES AND CLAIMS" has the meaning set forth in Section 12.1.

1.30 "MAJOR MARKET COUNTRY" means [*].

1.31 MANUFACTURING COST" means (i) [*] plus (ii) [*]. Annual adjustments to variable overhead charges will be based on actual costs, while fixed overhead will be adjusted annually based on changes from the previous year to the Producer Price Index- Commodities Index for Drugs and Pharmaceuticals, as published by U.S. Department of Labor, Bureau of Statistics (or successor governmental authority). As an example of idle capacity charges, if a Party reserves a capacity of [*] and actual demand is [*], then the idle plant for the balance of [*] capsules will be included in the Manufacturing Cost; however, if a Party needs [*] capsule capacity and BMS were to build a new plant for [*] capsule capacity, then [*] capsule idle plant will not be part of the Manufacturing Cost.

1.32 "MARKETING AUTHORIZATION" means, with respect to a country, the regulatory authorization required to market and sell a Product in such country.

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1.33 "MGH LICENSE AGREEMENT" means the agreement between The General Hospital Corporation d/b/a Massachusetts General Hospital ("MGH") and Bristol-Myers Squibb Company that is currently being negotiated and that will be entered into after the Effective Date, and as it may be modified or supplemented after being entered into, under which BMS will be obligated to pay MGH a royalty on the sales of Products.

1.34 "NDA" means a New Drug Application, as defined in the United States Federal Food, Drug and Cosmetic Act and applicable regulations promulgated thereunder as amended from time to time.

1.35 "NET SALES" means the [*] by the Royalty Paying Party, its Affiliates or sublicensees for sales of Product in finished package form (ready for use by the ultimate consumer) in the Territory to a Third Party, including, but not limited to, sales to wholesalers or other customers typical in each country in bona fide, arm's length transactions. In determining Net Sales, certain deductions may be taken against [*] to the extent not reimbursed by a Third Party. These allowable deductions are:

1.35.1 [*];

1.35.2 [*];

1.35.3 [*];

1.35.4 [*]; and

1.35.5 [*];

A "sale" of a Product is deemed to occur upon [*].

With respect to a Combination Product, Net Sales for such Combination Product sold by the Royalty Paying Party shall be determined [*].

1.36 "PHASE II CLINICAL STUDY" means a clinical study of a Product in human subjects for the purpose of identifying a dose or doses at which there is evidence of

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efficacy and acceptable safety and tolerability, which shall be deemed commenced upon the dosing of the first subject in such study.

1.37 "PHASE III CLINICAL STUDY" means a clinical study of a Product in human subjects the results of which could be used to establish safety and efficacy of the Product as a basis for Marketing Authorization of the Product which shall be deemed commenced upon the dosing of the first subject in such study.

1.38 "PRODUCT" means any product or pharmaceutical formulation containing a Compound as one of its active ingredients (or as the sole active ingredient), in all dosage forms, formulations, presentations, line extensions, and package configurations.

1.39 "REGULATORY AUTHORITY" means any regulatory agency or other governmental instrumentality that has regulatory authority, anywhere or at any governmental level, in the Territory over the Development or Commercialization of the Products.

1.40 "ROYALTY PAYING PARTY" has the meaning set forth in Section 8.5.

1.41 "ROYALTY RECEIVING PARTY" has the meaning set forth in Section 8.5.

1.42 "BMS OPTION" has the meaning set forth in Section 3.2.1.

1.43 "BMS OPTION PERIOD" has the meaning set forth in Section 3.2.1.

1.44 "SOLE INVENTIONS" has the meaning set forth in Section 10.1.

1.45 "SUPPLY AGREEMENT" has the meaning set forth in Section 7.3.

1.46 "TERRITORY" means any country in the world.

1.47 "THIRD PARTY" means any business entity other than Vanda, BMS and their respective Affiliates.

1.48 "VALID CLAIM" means a claim of an issued and unexpired patent, or a claim of a pending patent application or a supplementary protection certificate, which claim has not been held invalid or unenforceable by a court or other government agency of competent jurisdiction from which no appeal can be or has been taken and has not been held or admitted to be invalid or unenforceable through re-examination or disclaimer, opposition procedure, nullity suit or otherwise, which claim, but for the licenses granted herein, would be infringed by the sale of a Product; provide however, that if a claim of a pending patent application shall not have issued within [*] after the filing date from which such claim takes priority, such claim shall not constitute a Valid Claim for the purposes of this Agreement unless and until such claim shall issue.

1.49 "VANDA THIRD PARTY DEVELOPMENT OPTION" has the meaning set forth in Section 3.1.1.

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1.50 "VANDA THIRD PARTY DEVELOPMENT OPTION PERIOD" has the meaning set forth in Section 3.1.1.

## ARTICLE 2
## LICENSE GRANT

2.1 EXCLUSIVE LICENSE GRANT. Subject to all of the terms and conditions in this Agreement, BMS hereby grants to Vanda a non-transferable, exclusive license, with the limited right to sublicense pursuant to Section 2.3, under the BMS Compound Patent Rights solely to the extent necessary to Develop, make, have made, use, import, offer to sell, and Commercialize the Products in the Field in the Territory.

2.2 NON EXCLUSIVE LICENSE GRANT. Subject to all of the terms and conditions in this Agreement, BMS hereby grants to Vanda a non-transferable, nonexclusive license, with the limited right to sublicense pursuant to Section 2.3, (a) under the BMS Know How solely to the extent necessary to Develop, make, have made, use, import, offer to sell, and Commercialize the Products in the Field in the Territory, and (b) in the event Vanda enters into a Supply Agreement with a Third Party in accordance with Article 7, under the BMS Manufacturing Patents solely to the extent necessary to have made the Products or Compounds in the Field in the Territory for sale to Vanda.

2.3 SUBLICENSE. The rights licensed to Vanda under Sections 2.1, 2.2(a) and 2.2(b) shall be sublicensable only as part of a license of rights to a Product in the Field and only for use with such Product, and only where (i) the sublicensee has agreed first in writing to be bound by the terms and conditions of this Agreement in the same manner as Vanda, (ii) BMS is made an express third party beneficiary of the sublicensee's obligations under such sublicense that relate to compliance with the terms and conditions of this Agreement, and (iii) a copy of the proposed sublicense shall have been provided to BMS for review (financial terms not relating to this Agreement may be redacted). A copy of the sublicense shall be provided to BMS promptly after execution. Vanda shall remain jointly and severally liable with any such sublicensee for any failure by such sublicensee to perform or observe the terms and conditions of this Agreement. Each sublicense granted by Vanda to any right licensed to it hereunder shall terminate immediately upon the termination of the license from BMS to Vanda with respect to such right.

2.4 NO TRADEMARK LICENSE. No right or license, express or implied, is granted to Vanda to use any trademarks, tradenames or trade dress owned or Controlled by BMS and its Affiliates.

2.5 NO IMPLIED LICENSES. Only licenses and rights granted expressly herein shall be of legal force and effect. No license or other right shall be created hereunder by implication, estoppel or otherwise. Vanda represents, covenants and warrants that it will use the rights licensed to it hereunder solely in accordance with the terms and conditions contained in this Agreement.

2.6 MARKETING ARRANGEMENTS. In connection with arrangements with Third Parties whereby such Third Parties would distribute or otherwise Commercialize Products, Vanda agrees to comply and to cause such Third Parties to comply with all terms and conditions of this Agreement.

2.7 RETAINED RIGHTS. All rights not expressly granted hereunder are reserved by BMS and may be used by BMS for any purpose.

## ARTICLE 3
## OPTION GRANTS

3.1 VANDA'S OPTION. THIRD PARTY DEVELOPMENT PARTNERS.

3.1.1 Vanda Development Option Period. Vanda will have the right, anytime prior to [*] ("Vanda Third Party Development Option Period"), to negotiate an agreement to sublicense Vanda's rights to Develop and Commercialize a Product (a "Development and Commercialization Agreement") with a Third Party in at least one Major Market Country ("Vanda Third Party Development Option"); provided, however, that with respect to each Product,[*] Vanda shall have a limited time in which to exercise the Vanda Third Party Development Option for the Product before the right to exercise such option is suspended. Vanda shall have [*] from the [*] to exercise such option. If Vanda exercises such option during such [*] period, BMS shall have a right of first negotiation to enter into a Development and Commercialization Agreement for the Product with Vanda. [*] Vanda shall timely provide BMS with copies of any reports, data, results or information, material to the Development of the Product that are or may become available, including but not limited to [*]. BMS will have a [*] period of exclusivity in which to negotiate and execute a Development and Commercialization Agreement, and Vanda shall negotiate in good faith during such [*] period. During such [*] period and such [*] period of exclusivity, Vanda shall not approach any Third Party concerning a Development and Commercialization Agreement or disclose [*]. If, [*] BMS does not [*] during such [*] period of exclusivity, then Vanda shall have [*] from the end of the [*] review period if BMS does not provide Vanda with [*]

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during such [*] period, or [*] for the Product or [*] from the end of the [*] period of exclusivity if BMS [*] but the parties do not enter into a such an agreement during such [*] period, as the case may be, to negotiate and enter into a Development and Commercialization Agreement with a Third Party for the Product. If Vanda does not enter into such an agreement with a Third Party during such [*] period, then the Vanda Third Party Development Option shall be suspended from the end of such [*] period (the Option Suspension Date) until the end of the BMS Option Period for the Product. The Vanda Third Party Development Option is exercisable by written notice from Vanda to BMS of Vanda's intention to seek a Third Party partner. Such option shall be exercisable on a [*] basis. For the avoidance of doubt, [*] shall be referred to as the "Remaining Countries."

3.1.2 Option Exercise. Except as provided in Section 3.1.1 for the period following the [*], in the event that Vanda exercises its Vanda Third Party Development Option for a Product in a particular Major Market Country in the Vanda Third Party Development Option Period, BMS shall have a right of first negotiation to enter into a Development and Commercialization Agreement for that Product in that Major Market Country. BMS shall have a [*] period, from the receipt of Vanda's written notice to seek a Third Party partner, to elect to enter into negotiations with Vanda. During the [*] review period, Vanda shall timely provide BMS with copies of any reports, data, results or information, material to the Development of a Product that are or may become available. Thereafter BMS will have a [*] period of exclusivity in which to negotiate and execute a Development and Commercialization Agreement for the Product, and Vanda shall negotiate in good faith during such [*] period. If during the [*] review period BMS [*] or if BMS does not enter into such an agreement during the [*] period of exclusivity, then Vanda may enter into a Development and Commercialization Agreement for the Product with a Third Party. The Parties will use reasonable efforts to make decisions earlier than the final day of each period allowed by this section 3.1.2 to the extent practicable. In the event that Vanda enters into one or more Development and Commercialization Agreements for a Product pursuant to the provisions of Section 3.1.1 and/or this Section 3.1.2 prior to the Option Suspension Date, then BMS will [*].

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3.1.3 Vanda Third Party Development Option Not Exercised. In the event Vanda does not exercise its Vanda Third Party Development Option for a Product or enter into any Development and Commercialization Agreements for the Product/prior to [*] then BMS will have an opportunity to exercise its BMS Option for the Product in all countries on the terms and conditions described in Section 3.2.

3.2 BMS OPTION EXERCISABLE UPON COMPLETION OF PHASE III CLINICAL STUDIES: COMMERCIALIZATION.

3.2.1 BMS Option Period. The BMS Option Period for a Product will commence for the Remaining Countries (providing Vanda has not entered into one or more Development and Commercialization Agreements for the Product which when taken together include all of the Major Market Countries prior to the Option Suspension Date for the product) on the date that (1) [*] and (2) [*]. The BMS Option Period shall terminate [*] later ("BMS Option Period"). At any time during the BMS Option Period, BMS may provide Vanda with written notice that either: (a) it does not wish to Develop or Commercialize the Product in the Remaining Countries; or (b) it wishes to reacquire all rights to the Product in the Remaining Countries ((b) shall be referred to as the "BMS Option"). [*] For the avoidance of doubt, if BMS does not exercise the BMS Option for the Remaining Countries within the BMS Option Period, then upon completion of the BMS Option Period, the Vanda Third Party Development Option shall be exercisable for the Remaining Countries for the remainder of the Vanda Third Party Development Option Period.

3.2.2 BMS Option Diligence Materials. Vanda shall provide to BMS on or prior to the commencement of the BMS Option Period, any additional data (including without limitation, copies of all case report forms, if requested by BMS) or information relating to the Development of the Product that is in Vanda's possession which BMS reasonably believes to be necessary or useful for its review of the opportunity. At [*] intervals during the BMS Option Period, Vanda will promptly provide any reports, data, results or information, material to the Development of a Product that may become available.

3.2.3 Option Exercised. In the event BMS exercises its BMS Option for a Product, then, among other things,

(a) LICENSE GRANT. The licenses granted to Vanda pursuant to Section 2.1 and 2.2 will immediately terminate with respect to the Product in the Remaining Countries without further action on the part of either Party, and Vanda shall cease all use of the BMS Patent Rights, and BMS Know-How with respect to the Product in the Remaining Countries;

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(b) TRANSFER OF DATA, INFORMATION AND REGULATORY FILINGS. Vanda shall promptly assign to BMS all rights, title and interests in any INDs, Marketing Authorizations, and Approvals that it shall have filed in the Remaining Countries with respect to the Product and the Compound contained in the Product and all data generated by it with respect to the Product and the Compound contained in the Product in the Remaining Countries, and will promptly transfer to BMS originals or copies of all pertinent documents relating to same as requested by BMS. In the event that Vanda fails to effectuate the transfer of the foregoing within [*] after the date that BMS exercises its BMS Option, then, in addition to any other recourse or remedy that BMS may be entitled to at law or in equity, BMS shall [*]. BMS will reimburse Vanda for any out-of-pocket expenses incurred in connection with such assignment. Within [*] following any such assignment to BMS, the Parties will finalize and enter into a Data Safety Exchange covering such matters as adverse event reporting, data safety exchange and response to physician inquiries so that BMS may fulfill its reporting responsibilities on a timely basis to Regulatory Authorities;

(c) DEVELOPMENT BMS will thereafter be solely responsible for any further Development activities needed to achieve Approvals in the Remaining Countries for the Product, and will use Commercially Reasonable Efforts to achieve same;

(d) COMMERCIALIZATION. Provided the United States is included in the Remaining Countries, as soon as reasonably necessary, and in no event later than [*], BMS will advise Vanda in writing whether it intends to seek a co-promotion partner in the United States for the Product. In the event that BMS seeks a co-promotion partner in the United States, and provided that Vanda is able to meet the requirements established by BMS at that time for a co-promotion partner, the Parties will have [*] in which to negotiate a mutually acceptable co-promotion agreement in accordance with Section 3.3; and

(e) OTHER TERMS. The provisions of Section 13.4. l(e), (g), (h) and (i) shall also apply as though set forth herein. It is understood and agreed that BMS shall [*].

3.2.4 BMS Option Not Exercised. In the event that BMS does not exercise its BMS Option for a Product with respect to the Remaining Countries, Vanda will, subject to Section 3.3, Develop and Commercialize the Product in the Remaining Countries pursuant to the terms and conditions set forth in this Agreement.

3.3 RIGHT OF FIRST NEGOTIATION TO ACT AS A CO-PROMOTION PARTNER IN COMMERCIALIZATION OF A PRODUCT BY EITHER PARTY.

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3.3.1 Vanda's Right to Co-Promote. If BMS is Developing and/or Commercializing a Product in the U.S. pursuant to this Agreement and decides to co-promote the Product with a Third Party marketing partner in the U.S., BMS shall promptly notify Vanda in writing of its intention to co-promote the Product with such Third Party marketing partner in the U.S. Vanda will have [*] from the date BMS notifies Vanda of its intention to co-promote the Product with such Third Party marketing partner to provide written notice of its intent to exercise its option to co-promote the Product with BMS in the U.S. and demonstrate that it has, or is reasonably likely to have at the time required, the capabilities to undertake such co-promotion effort, including without limitation, sufficient numbers of Vanda employees with sufficient experience as sales representatives and sales and marketing managers and executives to allow it to fulfill the obligations established by BMS for the co-promotion partner (including without limitation minimum number of details, minimum primary detail equivalents, sales force size and training, advertising and promotional spend requirements, etc.). Vanda may not delegate or subcontract such co-promotion responsibilities to a Third Party, unless such Third Party (a) has been an alliance partner of Vanda's for at least [*] prior to the date Vanda receives notice under this Section 3.2.1 from BMS of BMS' intention to co-promote the Product with a Third Party marketing partner, and (b) has the capabilities to undertake such co-promotion effort, including without limitation, sufficient numbers of employees with sufficient experience as sales representatives and sales and marketing managers and executives to allow it to fulfill the obligations established by BMS for the co-promotion partner (including without limitation minimum number of details, minimum primary detail equivalents, sales force size and training, advertising and promotional spend requirements, etc.). If Vanda exercises its option and demonstrates to BMS' satisfaction that it can meet, or is reasonably likely to be able to meet at the necessary time, such capabilities and fulfill such obligations by itself or with such an alliance partner, the Parties will, for a period not longer than [*] after Vanda's exercise of the option, exclusively negotiate with each other in good faith a Co-Promotion Agreement on commercially reasonable terms and conditions [*]. If after such [*] period, the Parties have not entered into a co-promotion agreement, BMS would be free to enter into an arrangement with a Third Party marketing partner.

3.3.2 BMS' Right to Co-Promote. If Vanda is Commercializing a Product pursuant to this Agreement and decides to co-promote the Product with a Third Party marketing partner, Vanda shall promptly notify BMS in writing of its intention to co-promote the Products with such Third Party marketing partner. BMS will have [*] from the date Vanda notifies BMS of its intention to co-promote the Product with such Third Party marketing partner to provide written notice of its intent to exercise its option to co-promote the Product with Vanda. If BMS exercises its option, the Parties will, for a period not longer than [*] after BMS' exercise of the option, negotiate exclusively with each other in good faith a co-promotion agreement on commercially reasonable terms and conditions [*]. If after such [*] period, the Parties have not entered into a co-promotion agreement, Vanda would be free to enter into an arrangement with a Third Party marketing partner.

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3.4 RESPONSIBILITIES REGULATORY AFFAIRS. Following the date that the IND, Marketing Authorization or Approval in a given country for a Product has been assigned to BMS, BMS shall have sole responsibility for preparing, all regulatory filings and related submissions with respect to the Product and the Compound contained in the Product in such country and making all final decisions relating thereto. BMS shall be the primary interface with and otherwise handle all interactions with Regulatory Authorities concerning the Product and the Compound contained in the Product. Pursuant to Section 14.7, Vanda shall be obliged to render whatever assistance BMS may reasonably request to allow BMS to fulfill its obligations under this Section 3.4. To the extent not prohibited by law or regulation, in the event that BMS is Developing and Commercializing a Product in the United States, Vanda shall have the right to have one representative participate in all material meetings pertaining to Development of the Product between representatives of BMS and the FDA. BMS will provide Vanda, at least five (5) business days before any such meeting, with copies of all documents, correspondence and other materials in its possession which are relevant to the matters to be addressed at any such meeting. BMS will provide Vanda with draft and final copies (which may be wholly or partly in electronic form) of all material correspondence with the Regulatory Authorities in each of the Major Market Countries relating to the Product, including any draft Marketing Authorizations and Approvals, for Vanda's review and comment within a reasonable time prior to filing with the appropriate Regulatory Authority. BMS shall give due consideration to Vanda's comments, however, BMS shall not-be bound thereby.

## ARTICLE 4
## TRANSFER OF BMS KNOW-HOW;

4.1 TRANSFER OF BMS COMPOUND KNOW-HOW.

4.1.1 TRANSFER. During the [*] period following the Effective Date, BMS shall provide Vanda with the assistance of certain BMS employees having knowledge relevant to the Compounds to provide Vanda with a reasonable level of technical assistance and consultation in connection with the transfer of BMS Know-How (provided that BMS shall only be required to make a good faith effort to provide the BMS Know How but shall not be in default hereunder for inadvertent failure to disclose all or non-material information). Vanda shall be responsible for ensuring that its personnel who receive such assistance are appropriately qualified and experienced for such purpose.

4.1.2 COPIES OF DOCUMENTS. BMS shall provide Vanda with one copy of all documents, data or other information Controlled by BMS to the extent that such documents, data and information are the subject of the BMS Know-How licenses and are, in BMS' good faith judgment, reasonably necessary for the Development, manufacture or Commercialization of the Compounds and are reasonably available to BMS without undue searching; provided however, the foregoing shall in no event require BMS to provide copies of laboratory notebooks or manufacturing run records required to be maintained by FDA. The BMS Know-How provided by BMS shall not be used by Vanda for any purpose other than Development, manufacture or Commercialization of

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the Compounds and Products and is Confidential Information of BMS. Vanda shall assume full responsibility and liability to BMS for any unauthorized use or disclosure of Confidential Information of BMS. BMS shall be responsible for the cost of providing one set of copies only, and in addition to paper and other tangible copies, BMS shall, upon Vanda's request and where already available to BMS, also provide to Vanda electronic copies of such documents, data and other information, provided, that BMS shall have no obligation to reformat or otherwise alter or modify any such materials in order to provide them to Vanda.

4.1.3 ON-SITE CONSULTING. BMS shall not be obligated to provide more than [*] of consulting advice or on-site consulting advice (including travel time) over the term of this Agreement, as may be requested by Vanda, with respect to the transfer of any BMS Know-How. BMS will be reimbursed by Vanda for [*]. In the event that Vanda requires consultation with BMS over and above the [*] provided here, Vanda will submit its request for consultation to BMS, in writing, stating in sufficient detail the subject matter, and the number of hours required. BMS will consider each such request in good faith, and will inform Vanda in a timely manner if BMS will be able to provide the consulting time requested, with the understanding that BMS shall not obligated to provide more than [*] consulting advice or on-site consulting advice (including travel time) over the term of this Agreement.

4.1.4 IND. As soon as reasonable practicable after the Effective Date, BMS will promptly effectuate the assignment of IND 54,776 (the active IND for the Compound currently identified as BMS-214778) to Vanda. Vanda will [*].

4.2 NON-SOLICITATION. During the term of this Agreement, and for [*] thereafter, each Party and its Affiliates shall not solicit, directly or indirectly, any employee of the other Party or of an Affiliate of the other Party, wherever located, who is or was involved in the performance of this Agreement; provided, that the foregoing restriction on solicitation shall not apply to advertisements run in trade journals or other publications or on the Internet that are targeted to qualified individuals generally for the position in question.

## ARTICLE 5
## DEVELOPMENT

5.1 PROGRAM LIAISON. As soon as practicable after the Effective Date, each Party will provide the other, in writing, with the name of its "Program Liaison." The Program Liaison will act as the primary liaison in coordinating the activities under this Agreement. The Program Liaisons will review and agree on the suitability of the Development Plan set forth in Schedule 1.19. Before Vanda begins Development of a Product under a Development Plan other than the Development Plan in Schedule 1.19, the Program Liaisons will prepare such Development Plan, and the Parties must agree in

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writing upon such Development Plan before Vanda commences Development of the Product under such Development Plan.

5.2 DEVELOPMENT

5.2.1 Vanda shall use good faith Commercially Reasonable Efforts to Develop the Compounds and Products.

5.2.2 As soon as reasonably practicable after the Effective Date, Vanda shall commence Phase II Clinical Studies for the Product in accordance with the Development Plan set forth in Schedule 1.19 and this Agreement. In any event, Vanda (a) [*], (b) [*], (c) [*], (d) [*]. In the event that any of such milestones are missed, it shall be deemed a material breach of this Agreement for the purposes of Article 13. BMS' ability to terminate this Agreement pursuant to Section 13.2 shall apply [*]. If Vanda misses any of the above milestone dates, Vanda may request that BMS grant a reasonable extension to allow it to meet such milestone, and BMS agrees that it will not unreasonably withhold its assent to any such reasonable revision where supported by clear evidence that Vanda has been making good faith and diligent efforts to achieve the milestones but has failed as a result of technical difficulties or delays that the parties could not have reasonably avoided in the achievement of such milestones; and provided, that BMS may also need to seek approval of MGH in such event, and any approval by BMS shall further be conditioned on receipt of approval of MGH.

5.3 DEVELOPMENT REPORTS. Vanda shall provide [*] written reports to BMS, within [*], presenting a meaningful summary of the Development activities accomplished by Vanda and results obtained through [*]. Such reports shall include all material results, information and data generated in the course of Development of Products. Vanda will make Development plans, clinical protocols, investigator brochures and regulatory submissions available to BMS at BMS' written request. In addition, on reasonable request by BMS, Vanda will meet with BMS to make presentations of the Development activities taken relating to the Products.

5.4 RECORDS. Vanda shall maintain complete and accurate records of all work conducted in furtherance of the Development and Commercialization of the Compounds and Products and all results, data and developments made in furtherance thereof. Such records shall be complete and accurate and shall fully and properly reflect all work done and results achieved in sufficient detail and in good scientific manner appropriate for patent and regulatory purposes.

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5.5 DEVELOPMENT RESPONSIBILITIES AND COSTS. Except in the case where BMS enters into a Development and Commercialization Agreement or exercises its BMS Option, Vanda shall have sole responsibility for, and shall [*] of conducting, Development with respect to Products and Compounds. Vanda shall Develop the Compounds and Products in compliance with all applicable legal and regulatory requirements, including without limitation all legal and regulatory requirements pertaining to the design and conduct of clinical studies.

5.6 REGULATORY RESPONSIBILITIES AND COSTS.

5.6.1 Regulatory Interactions. Only in the case where Vanda does not enter into any Development and Commercialization Agreements and BMS does not exercise the BMS Option, Vanda shall have sole responsibility for, and shall bear the cost of preparing, all regulatory filings and related submissions with respect to Compounds or Products. Vanda shall be the primary interface with and otherwise handle all interactions with Regulatory Authorities concerning Compounds or Products. To the extent not prohibited by law or regulation, BMS shall have the right to have one representative participate in all material meetings pertaining to Development of a Product between representatives of Vanda and Regulatory Authorities of the Major Market Countries and the FDA. Vanda will provide BMS, at least five (5) business days before any such meeting, with copies of all documents, correspondence and other materials in its possession which are relevant to the matters to be addressed at any such meeting. Vanda will provide BMS with draft and final copies (which may be wholly or partly in electronic form) of all material correspondence with Regulatory Authorities relating to the Product, including any draft Marketing Authorizations, for BMS' review and comment within a reasonable time prior to filing with the Regulatory Authorities. Vanda will be responsible for meeting the requirements of all pre-approval inspections required by any Regulatory Authorities.

5.6.2 Ownership of Regulatory Filings. Vanda shall own all INDs, Marketing Authorizations, Approvals and submissions in connection therewith and Approvals shall be obtained by and in the name of Vanda, unless and until BMS (a) has entered into a Development and Commercialization Agreement with Vanda pursuant to Section 3.1, or (b) has exercised the BMS Option.

## ARTICLE 6
## COMMERCIALIZATION

6.1 COMMERCIALIZING PARTY'S RESPONSIBILITIES.

6.1.1 Introduction. The Party Commercializing a Product in a country (the "Commercializing Party") shall use Commercially Reasonable Efforts to Commercialize the Product and, at a minimum, effect introduction of the Product into such country as soon as reasonably practicable.

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6.1.2 Continued Availability. Following the First Commercial Sale of a Product in a country in the Territory and until the expiration or termination of this Agreement, the Commercializing Party shall use Commercially Reasonable Efforts to supply and keep the Product reasonably available to the public in such country.

6.1.3 Marking. Each Product Commercialized by Vanda under this Agreement shall be marked (to the extent not prohibited by law): (a) with a notice that such Product is sold under a license from BMS and (b) with all patent and other intellectual property notices relating to the BMS Patent Rights in such a manner as may be required by applicable law.

## ARTICLE 7
## MANUFACTURE AND SUPPLY

7.1 RESPONSIBILITY. Subject to Section 7.2, the Commercializing Party for a Product shall be solely responsible at its expense for all of its requirements in the Territory for any purpose of the Product and the Compound contained in the Product and shall use Commercially Reasonable Efforts to supply all requirements of its customers. The Commercializing Party shall manufacture, or cause to have manufactured, the Product and the Compound contained in the Product in compliance with all applicable legal and regulatory requirements and with its internal policies and procedures.

7.2 PROVISION OF COMPOUND. As soon as possible after the Effective Date, (and no later than thirty (30) days) BMS will transfer to Vanda [*]active pharmaceutical ingredient that has been requalified by BMS to be within specification as well as the most recent reference standard that has been submitted.

7.3 RIGHT TO MANUFACTURE COMMERCIAL SUPPLY. In the event that BMS has entered into a Development and Commercialization Agreement or exercised its BMS Option for a particular Product, BMS will have the first right to manufacture and supply such Product or the Compound contained in such Product at any time thereafter for clinical and commercial use, as applicable. In the event that BMS does not enter into a Development and Commercialization Agreement or exercise its BMS Option for a particular Product, and Vanda enters into negotiations with a Third Party to manufacture a clinical or commercial supply of such Product or the Compound contained in such Product (the "Supply Agreement"), it will promptly notify BMS and provide [*]. BMS will have [*] from receipt of the data summary to notify Vanda that it will [*]. The Parties will then negotiate a Supply Agreement in good faith for [*] or such longer period as agreed between the Parties. In the event the Parties do not enter into a Supply Agreement within such [*] period, or the agreed extension thereof, Vanda is free to enter into an agreement with any other entity with respect to such clinical or commercial supply.

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ARTICLE 8
PAYMENTS

8.1 TECHNOLOGY ACCESS FEE. On [*], Vanda will pay to BMS the sum of five hundred thousand Dollars ($500,000) as partial reimbursement for BMS' previously incurred research and development expenses for the Compounds.

8.2 MILESTONE PAYMENTS.

8.2.1 Milestone Payments By Vanda. In the event that Vanda is Developing or Commercializing a Product in any country and/or has entered into a Development and Commercialization Agreement for the Product with a Third Party, then Vanda will pay BMS, as partial reimbursement for research and development expenses for the Compounds, upon Vanda or such Third Party achieving the following milestones for that Product:

| MILESTONE | DOLLARS |
| --- | --- |
| [*] | [*] |
| [*] | [*] |
| [*] | [*] |
| [*] | [*] |

8-2.2 "BMS Option" Milestone Payments by BMS. In the event that BMS exercises its BMS Option for a particular Product, then BMS will pay Vanda, as partial reimbursement for research and development expenses for the Compounds, upon BMS achieving the following milestones for that Product:

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| MILESTONE | DOLLARS |
| --- | --- |
| [*] | [*] |
| [*] | [*] |
| [*] | [*] |

8.2.3 [*]

8.3 TIMING. Payment shall be made [*] following the occurrence of an event giving rise to a payment obligation hereunder. All payments to BMS shall be made by wire transfer in Dollars to the credit of the bank account indicated below or to such other account as may be designated, from time to time, by BMS in writing. All Payments to Vanda shall be made by wire transfer in Dollars to the credit of such bank account as may be designated, from time to time, by Vanda in writing.

Bank: [*]

ABA No.: [*]

Account No.: [*]

Account Name: [*]

Company Details: [*]

8.4 DEVELOPMENT COSTS.

8.4.1 Vanda Development Costs. Vanda will be responsible for all Development Costs, unless BMS enters into a Development and Commercialization Agreement prior to the BMS Option Period, in which the terms may involve sharing in Development Costs for that Product.

8.5 ROYALTY PAYMENT.

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8.5.1 Vanda Royalty to BMS. In the event that Vanda Commercializes a Product and/or enters into a Development and Commerdalization Agreement with a Third Party for the Product, then Vanda will pay BMS a [*] percent ([*]%) royalty on annual Net Sales of that Product by Vanda, its Affiliates, and sublicensees, including but not limited to such Third Party, in the Territory. In the event that Vanda enters into one or more Development and Commercialization Agreements for a particular Product, Vanda will also pay BMS [*] percent ([*]%) of [*] that are received by Vanda in consideration of each such Development and Commercialization Agreement. Vanda agrees that it shall also pay MGH, on behalf of BMS, all financial obligations of BMS under the MGH License Agreement arising from the Development, manufacture and Commercialization of Products by Vanda, its Affiliates and sublicensees, including but not limited to any royalty obligation under the MGH license Agreement arising from the sale of any Product by Vanda, its Affiliates or sublicensees in the Territory, and shall comply with and fulfill all applicable terms and conditions of the MGH License Agreement. Without limiting the foregoing, with respect to each Product, Vanda shall comply with and fulfill all of the applicable terms and conditions of the MGH License Agreement relating to the Development, manufacture and Commercialization of Products by Vanda, its Affiliates and sublicensees, which shall include making the royalty payments in accordance with the terms and conditions of the MGH license Agreement, keeping books of accounting and making them available for inspection by MGH in accordance with the terms and conditions of the MGH License Agreement, providing any information and reports to MGH required by the terms and conditions of the MGH License Agreement in connection with the sale of any Product, and obtaining and maintaining the type and amounts of insurance required of BMS under the MGH License Agreement. Vanda shall provide BMS with a copy of each document provided to MGH in accordance with the terms and conditions of the MGH License Agreement, including but not limited to a copy of each royalty report and a copy of any other document providing information to MGH.

8.5.2 BMS Royalty to vanda. In the event that BMS exercises its BMS Option for a particular Product, BMS will pay directly to Vanda a [*] percent ([*]%)royalty on annual Net Sales of that Product by BMS, its Affiliates and sublicensees in the Remaining Countries. If, however, BMS entered into a Development and Commercialization Agreement, BMS would pay [*].

Each of the foregoing shall be collectively and individually referred to as "Royalties." The Party paying Royalties shall be referred to as the "Royalty Paying Party". The Party receiving Royalty payments shall be referred to as the "Royalty Receiving Party".

8.6 THIRD PARTY ROYALTY PAYMENTS. The Royalty Paying Party shall be responsible for making any Third Party license payments, whether existing as of or arising after the Effective Date and reasonably necessary to Develop or Commercialize the Product.

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8.7 [*] THIRD PARTY ROYALTY PAYMENTS. Other than any royalties due to a Third Party under the MGH License Agreement or under agreements existing as of the Effective Date with respect to the manufacture, use or sale of a Product, the Royalty paying party, its Affiliates and sublicensees shall, except where Section 8.8.2 applies, be entitled to offset up to [*] of any royalties due to the Royalty Receiving Party by the amount of any royalties and license fees paid to a Third Party reasonably necessary to enable the Royalty Paying Party to sell the Product in a country in the Territory; provided, that the royalty payable to the Royalty Receiving Party shall not be reduced below [*] of what it would otherwise have received in the absence of this Section 8.7.

8.8 TERM FOR ROYALTY PAYMENTS.

8.8.1 Term. Royalties shall be payable on a country by country basis from the First Commercial Sale until the later of (a) [*] from the First Commercial Sale and (b) the expiration of the last to expire patent owned or Controlled by the Royalty Receiving Party (including extensions thereof) with a Valid Claim directed to the Product, including, without limitation, a method of use thereof.

8.8.2 Countries With No Valid Claim Covering Product. If at any time during the royalty period set forth in 8.8.1 there is in a country no patent owned or Controlled by the Royalty Receiving Party with a Valid Claim directed to the Product or a method of use thereof, then the royalties shall be reduced [*] with respect to the Net Sales of the Product in such country.

8.9 SALES REPORTS

8.9.1 Substance of Reports. After the First Commercial Sale of Product and during the term of this Agreement, the Royalty Paying Party shall furnish or cause to be furnished to the Royalty Receiving Party a written report, within 30 days after the end of each calendar quarter, showing the amount of royalty due calculated for such calendar quarter, with the royalty due paid to the Royalty Receiving Party at the time such report is provided. With each quarterly payment, the Royalty Paying Party shall deliver to the Royalty Receiving Party a full and accurate accounting to include at least the following information:

(a) Quantity of each Product sold or leased (by country) by the Royalty Paying Party, and its Affiliates or sublicensees;

(b) Total billings for each Product (by country);

(c) Quantities of each Product used by the Royalty Paying Party and its Affiliates or sublicensees or sold to the U.S. Government;

(d) Names and Addresses of all sublicensees of the Royalty Paying Party; and

(e) Total royalties payable to the Royalty Receiving Party.

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8.9.2 Sales Record Audit. The Royalty Paying Party shall keep, and shall cause each of its Affiliates and sublicensees, if any, to keep full and accurate books of accounting containing all particulars that may be necessary for the purpose of calculating all royalties payable to the Royalty Receiving Party. Such books of accounting shall be kept at their principal place of business and, with all necessary supporting data, shall during all reasonable times for the [*] next following the end of the calendar year to which each shall pertain, be open for inspection at reasonable times by an independent certified accountant selected by the Royalty Receiving Party, and as to which the Royalty Paying Party has no reasonable objection, at the Royalty Receiving Party's expenses, for the purpose of verifying royalty statements for compliance with this Agreement. Such accountant must have agreed in writing to maintain all information learned in confidence, except as necessary to disclose to the Royalty Receiving Party such compliance or noncompliance by the Royalty Paying Party. The results of each inspection, if any, shall be binding on both Parties. The Royalty Receiving Party shall pay for such inspections, except that in the event there is any upward adjustment in aggregate royalties payable for any year shown by such inspection of more than [*] of the amount paid, the Royalty Paying Party shall pay for such inspection. Any overpayments shall [*].

8.10 CURRENCY EXCHANGE. With respect to Net Sales invoiced in Dollars, the Net Sales and the amounts due to the Royalty Receiving Party hereunder shall be expressed in Dollars. With respect to Net Sales invoiced in a currency other than Dollars, the Net Sales shall be expressed in the domestic currency of the entity making the sale, together with the Dollar equivalent, calculated using the arithmetic average of the spot rates on the close of business on last Business Day of each month of the calendar quarter in which the Net Sales were made. The "closing mid-point rates" found in the "dollar spot forward against the dollar" table published by The Financial Times" or any other publication as agreed to by the Parties shall be used as the source of spot rates to calculate the average as defined in the preceding sentence. All payments shall be made in Dollars. If at any time legal restrictions in any country in the Territory prevent the prompt remittance of any payments with respect to sales in that country, the Royalty Paying Party shall have the right and option to make such payments by depositing the amount thereof in local currency to the Royalty Receiving Party's account in a bank or depository in such country.

8.11 TAX WITHHOLDING. The withholding tax, duties, and other levies (if any) applied by a government of any country of the Territory on payments made by the Royalty Paying Party, to the Royalty Receiving Party hereunder shall be borne by the Royalty Receiving Party. The Royalty Paying Party, its Affiliates and sublicensees shall cooperate with the Royalty Receiving Party to enable the Royalty Receiving Party to claim exemption therefrom under any double taxation or similar agreement in force and shall provide to the Royalty Receiving Party proper evidence of payments of withholding tax and assist the Royalty Receiving Party by obtaining or providing in as far as possible the required documentation for the purpose of the Royalty Receiving Party' tax returns.

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8.12 INTEREST DUE. In case of any delay in payment by the Royalty Paying Party to the Royalty Receiving Party not occasioned by Force Majeure, interest on the overdue payment shall accrue [*], as determined for each month on the last business day of that month, assessed from the day payment was initially due. The foregoing interest shall be due from the Royalty Paying Party without any special notice.

## ARTICLE 9
## REPRESENTATIONS AND WARRANTIES; DISCLAIMER; LIMITATION OF LIABILITY

9.1 MUTUAL WARRANTIES. Each Party represents and warrants to the other Party that (a) it (and in the case of Vanda, its general partner as well) has all requisite corporate power and authority to enter into this Agreement, to grant the licenses granted by it hereunder, and to perform its other obligations under this Agreement, (b) execution of this Agreement and the performance by the warranting Party (and in the case of Vanda, by its general partner as well) of its obligations hereunder, including, without limitation, the licenses granted by that Party hereunder, have been duly authorized, (c) this Agreement is fully binding and enforceable on each Party (and in the case of Vanda, on its general partner as well) in accordance with its terms, and (d) the performance of this Agreement by it does not create a breach or default under any other agreement to which it (and in the case of Vanda, to which its general partner as well) is a Party.

9.2 BMS WARRANTIES AND COVENANTS. As of the Effective Date, BMS represents and warrants to Vanda that, to the actual knowledge of its in-house patent counsel (based on such counsels' good faith understanding of the facts and information in their possession without any duty to conduct any investigation with respect to such facts and information), (a) there is no pending litigation which alleges, or any written communication alleging, that BMS(1) activities with respect to the BMS Patent Rights or the Compounds have infringed or misappropriated any of the intellectual property rights of any Third Party, (b) all fees required to be paid by BMS in order to maintain the patents licensed to Vanda hereunder have been paid to date as of the Effective Date such that the claims included in any such issued patents are in full force and effect as of the Effective Date, (c) [*], (d) it has the full right, power and authority to enter into this Agreement and to grant the licenses granted under Article II hereof, (e) it has not previously assigned, transferred, conveyed or otherwise encumbered its right, title and interest in the BMS Patent Rights or the BMS Know-How, and (f) it is the sole and exclusive owner of the BMS Patent Rights and the BMS Know-How.

9.3 VANDA WARRANTIES AND COVENANTS.

9.3.1 Vanda warrants, represents and covenants that all of its activities related to its use of the BMS Patent Rights and BMS Know-How, and the Development and Commercialization of the Compounds and Products, pursuant to this Agreement shall comply in all material respects with all applicable legal and regulatory requirements.

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Vanda further warrants and covenants that it shall not engage in any activities that use the BMS Patent Rights and BMS Know-How in a manner that is outside the scope of the license rights granted to it hereunder.

9.3.2 Vanda warrants, represents and covenants that it has [*]

9.4 DISCLAIMER. EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, BMS MAKES NO REPRESENTATIONS AND EXTENDS NO WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING ANY EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE BMS PATENT RIGHTS OR BMS KNOW-HOW OR ANY LICENSE GRANTED BY BMS HEREUNDER, OR WITH RESPECT TO ANY COMPOUNDS OR PRODUCTS. FURTHERMORE, NOTHING IN THIS AGREEMENT SHALL BE CONSTRUED AS A WARRANTY THAT ANY PATENT OR OTHER PROPRIETARY RIGHTS INCLUDED IN THE BMS PATENT RIGHTS ARE VALID OR ENFORCEABLE OR THAT VANDA'S USE OF THE BMS PATENT RIGHTS AND BMS KNOW-HOW CONTEMPLATED HEREUNDER DOES NOT INFRINGE ANY PATENT RIGHTS OR OTHER INTELLECTUAL PROPERTY RIGHTS OF ANY THIRD PARTY.

9.5 LIMITATION OF LIABILITY. NOTWITHSTANDING ANYTHING IN THIS AGREEMENT OR OTHERWISE, NEITHER PARTY SHALL BE LIABLE TO THE OTHER WITH RESPECT TO ANY SUBJECT MATTER OF THIS AGREEMENT, WHETHER UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY, OR OTHER LEGAL OR EQUITABLE THEORY, FOR ANY INCIDENTAL, INDIRECT, SPECIAL, EXEMPLARY, PUNITIVE, MULTIPLE, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, LOST PROFITS, LOSS OF USE, DAMAGE TO GOODWILL, OR LOSS OF BUSINESS) AND, IN ANY CASE, BMS SHALL NOT BE LIABLE IN AN AMOUNT GREATER THAN [*]; PROVIDED, THAT THE FOREGOING SHALL NOT APPLY TO ANY BREACH BY VANDA OF THE RIGHTS LICENSED TO IT UNDER ARTICLE 2 HEREOF OR TO ANY BREACH BY A PARTY OF ARTICLE 11 HEREOF.

## ARTICLE 10
## PATENT MAINTENANCE; INFRINGEMENT; CONFIDENTIALITY

10.1 INVENTIONS. Each Party shall own the entire right, title and interest in and to any and all inventions conceived solely by its employees and agents after the Effective Date ("Sole Inventions"), and any patents covering such Sole Inventions. BMS and Vanda shall each own an undivided one-half interest in and to any and all inventions conceived jointly after the Effective Date by (a) employees and agents of BMS and (b) employees and agents of Vanda, and in and to any patents and other intellectual property

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rights claiming or covering such joint Inventions ("Joint Inventions") BMS and Vanda as joint owners each shall have the right to exploit and to grant licenses under such Joint Inventions (without an accounting or obligation to, or consent required from, the other Party), unless otherwise specified in this Agreement.

10.2 PATENT MAINTENANCE; ABANDONMENT.

10.2.1 BMS PATENT RIGHTS. [*] shall be responsible for, and shall control, the prosecution (including any interferences, reissue proceedings and reexaminations) and maintenance of all BMS Patent Rights. [*] shall provide [*] with copies of all correspondence from any and all patent offices concerning the BMS Patent Rights and an opportunity to comment on any proposed responses, voluntary amendments and submissions of any kind to be made to any and all such patent offices (other than routine filings and correspondence to maintain the patents). [*] shall have the right to select the in-house or outside counsel who will perform the aforementioned prosecution and maintenance-associated activities, and [*] shall reimburse [*] (including any fees payable to the applicable patent office) incurred in connection therewith. In the event that BMS exercises the BMS Option and the Parties are co-Developing or co-promoting the Product, [*] will only reimburse [*] for [*] incurred [*], as applicable. If [*] elects not to pay any expenses with respect to a BMS Patent Right in a given country, [*] shall inform [*] in writing not less than [*] before any relevant deadline (or, in the event of a shorter period in which to respond to a patent office, as soon as reasonable practicable). In the event [*] makes such election, or if [*] fails to reimburse [*] for [*] incurred [*] a BMS Patent Right in a given country, [*]. Except as provided in the previous sentence, [*] may not abandon a BMS Patent Right without the prior written consent of [*].

10.2.2 SOLE INVENTIONS. Each Party shall direct and control at its expense the filing, prosecution (including any interferences, reissue proceedings and reexaminations) and maintenance of all patents covering its Sole Inventions.

10.2.3 JOINT INVENTIONS. The Parties shall supervise, and shall assign, on a Joint Invention-by-Joint Invention basis, one Party to be responsible for, the filing, prosecution (including any interferences, reissue proceedings and reexaminations) and maintenance of all patents covering such Joint Invention consistent with such strategy. The designated controlling Party shall provide the other Party with (a) drafts of any new patent application that covers a Joint Invention prior to filing that application, allowing adequate time for review and comment by the Party if possible; provided, however, the designated controlling Party shall not be obligated to delay the filing of any patent application; and (b) copies of all correspondence from any and all patent offices concerning patent applications covering Joint Inventions and an opportunity to comment on any proposed responses, voluntary amendments and submissions of any kind to be

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made to any and all such patent offices. The Parties shall mutually agree on the in-house or outside counsel who will perform the filing, prosecution and maintenance of Joint Inventions and the allocation of out-of-pocket costs incurred in connection therewith.

10.3 ENFORCEMENT OF BMS PATENT RIGHTS AGAINST INFRINGERS.

10.3.1 Enforcement [*]. In the event that BMS or in-house counsel of Vanda becomes aware of a suspected infringement of any BMS Patent Right, such Party shall notify the other Party promptly, and following such notification, the Parties shall confer. [*] shall have the right, but shall not be obligated, to bring an infringement action at its own expense, in its own name and entirely under its own direction and control. [*] will reasonably assist [*] in any action or proceeding being prosecuted if so requested, and will lend its name to such actions or proceedings if requested by [*] or required by law, and [*] will indemnify and hold [*] harmless from any liability incurred by [*] arising out of any such actions or proceedings. [*] shall have the right to participate and be represented in any such suit by its own counsel [*]. No settlement of any such action or defense which restricts the scope, or adversely affects the enforceability, of a BMS Patent Right may be entered into by [*] without the prior written consent of [*], which consent shall not be unreasonably withheld.

10.3.2 Enforcement [*]. If [*] elects not to bring any action for infringement described in Section 10.3.1 and so notifies [*], then [*] may bring such action at its own expense, in its own name and entirely under its own direction and control. [*] will reasonably assist [*] in any action or proceeding being prosecuted if so requested, and will lend its name to such actions or proceedings if requested by [*] or required by law, and [*] will indemnify and hold [*] harmless from any liability incurred by [*] arising out of any such actions or proceedings. [*] shall have the right to participate and be represented in any such suit by its own counsel [*]. No settlement of any such action or defense which restricts the scope, or adversely affects the enforceability, of a BMS Patent Right may be entered into by [*] without the prior written consent of [*], which consent shall not be unreasonably withheld.

10.3.3 Withdrawal. If either Party brings such an action or defends such a proceeding under this Section 10.3 and subsequently ceases to pursue or withdraws from such action or proceeding, it shall promptly notify the other Party and the other Party may substitute itself for the withdrawing Party under the terms of this Section 10.3.

10.3.4 Damages. In the event either Party exercises the rights conferred in this Section 10.3 and recovers any damages or other sums in such action, suit or proceeding or in settlement thereof, such damages or other sums recovered shall [*].

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10.4 DEFENSE OF THIRD PARTY CLAIMS. If a claim is brought by a Third Party against either Party that any activity related to the Development, manufacture, Commercialization, use, sale, import or export of a Compound or Product infringes the intellectual property rights of such Third Party, each Party will give prompt written notice to the other Party of such claim. The Royalty Paying Party shall control [*], and shall be solely responsible for, and shall defend, indemnify and hold harmless the Royalty Receiving Party and its Affiliates from and against, any such claims, damages, losses, liabilities, costs (including without limitation reasonable legal expenses, costs of litigation, and reasonable attorney's fees) or judgments, whether for money or equitable relief.

## ARTICLE 11
## NONDISCLOSURE OF CONFIDENTIAL INFORMATION.

11.1 NONDISCLOSURE. Each Party agrees that for a period of [*] after receipt of Confidential Information from the other Party, a Party receiving Confidential Information of the other Party will (a) use commercially reasonable efforts to maintain in confidence such Confidential Information (but not less than those efforts as such Party uses to maintain in confidence its own proprietary industrial information of similar kind and value) and not to disclose such Confidential Information to any Third Party without prior written consent of the other Party, except for disclosures made in confidence to any Third Party under terms consistent with this Agreement and made in furtherance of this Agreement or of rights granted to a Party hereunder, and (b) not use such other Party's Confidential Information for any purpose except those permitted by this Agreement (it being understood that this subsection (b) shall not create or imply any rights or licenses not expressly granted under Article 2 hereof).

11.1.1 EXCEPTIONS. The obligations in Section 11.1 shall not apply with respect to any portion of the Confidential Information that the receiving Party can show by competent proof:

(a) Is publicly disclosed by the disclosing Party, either before or after it is disclosed to the receiving Party hereunder; or

(b) Was known to the receiving Party or any of its Affiliates, without obligation to keep it confidential, prior to disclosure by the disclosing Party; or

(c) Is subsequently disclosed to the receiving Party or any of its Affiliates by a Third Party lawfully in possession thereof and without obligation to keep it confidential; or

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(d) Is published by a Third Party or otherwise becomes publicly available or enters the public domain, either before or after it is disclosed to the receiving Party; or

(e) Has been independently developed by employees or contractors of the receiving Party or any of its Affiliates without the aid, application or use of Confidential Information.

11.2 AUTHORIZED DISCLOSURE. A Party may disclose the Confidential Information belonging to the other Party to the extent such disclosure is reasonably necessary in the following instances:

11.2.1 Filing or prosecuting patents;

11.2.2 Regulatory filings;

11.2.3 Prosecuting or defending litigation;

11.2.4 Complying with applicable governmental laws and regulations and with judicial process;

11.2.5 Disclosure, in connection with the performance of this Agreement, to Affiliates, potential collaborators, partners, and counterparties (including potential co-marketing and co-promotion contractors), research collaborators, potential investment bankers, investors, lenders, and investors, employees, consultants, or agents, each of whom prior to disclosure must be bound by similar obligations of confidentiality and non-use at least equivalent in scope to those set forth in this Section 11.2; and

11.2.6 For purposes of raising capital, provided that prior to disclosure, each Third Party to whom Confidential Information is disclosed must be bound by similar obligations of confidentiality and non-use at least equivalent in scope to those set forth in this Section 11.2.

11.3 TERMS OF THIS AGREEMENT. The Parties acknowledge that the terms of this Agreement shall be treated as Confidential Information of both Parties. Such terms may be disclosed by a Party to individuals or entities covered by Sections 11.2.5 and 11.2.6 above, each of whom prior to disclosure must be bound by similar obligations of confidentiality and non-use at least equivalent in scope to those set forth in this Section 11.3. In addition, a copy of this Agreement may be filed by either Party with the Securities and Exchange Commission in connection with any public offering of such Party's securities. In connection with any such filing, such Party shall endeavor to obtain confidential treatment of economic and trade secret information. In any event, the Parties agree to take all reasonable action to avoid disclosure of Confidential Information except as permitted hereunder.

11.4 EXCEPTION FOR DISCLOSURE [*]. Notwithstanding anything else in this Agreement to the contrary, each Party hereto (and each employee, representative, or other agent of any Party) may disclose to any and all persons, without

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limitation of any kind, [*] and all materials of any kind [*] that are or have been provided to any Party (or to any employee, representative, or other agent of any Party) relating to [*], provided, however, that this authorization of disclosure shall not apply to restrictions reasonably necessary to comply with securities laws. This authorization of disclosure is [*] and the Parties [*] authorization has been given on [*].

## ARTICLE 12
## INDEMNITY

12.1 VANDA INDEMNITY. Vanda shall indemnify, defend and hold harmless BMS and its Affiliates and the officers, directors, employees, agents, licensors (including without limitation MGH and its officers, medical and professional staff, employees, trustees, and agents and their respective successors, heirs and assigns) and representatives of BMS and its Affiliates from and against any and all claims, threatened claims, damages, losses, suits, proceedings, liabilities, costs (including without limitation reasonable legal expenses, costs of litigation, and reasonable attorney's fees) or judgments, whether for money or equitable relief, of any kind ("Losses and Claims") arising out of or relating to, directly or indirectly, [*] except for Losses and Claims to the extent reasonably attributable to (i) breach by BMS of Article 11, or (ii) BMS having committed an act or acts of gross negligence, recklessness, or willful misconduct. A claim to which indemnification applies under this Section 12.1 or Section 12.2 shall be referred to herein as an "Indemnification Claim".

12.2 BMS INDEMNITY. Only in the event that BMS exercises the BMS Option with respect to a Product shall BMS indemnify, defend and hold harmless Vanda and its Affiliates and the officers, directors, employees, agents, licensors and representatives of Vanda and its Affiliates from Losses and Claims arising out of or relating to, directly or

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indirectly, [*] except for Losses and Claims to the extent reasonably attributable to (i) breach by Vanda of Article 11, or (ii) Vanda having committed an act or acts of gross negligence, recklessness, or willful misconduct.

12.3 INDEMNIFICATION PROCEDURES. If a party or any its Affiliates or their respective officers, directors, employees, agents, licensors and representatives (collectively, the "Indemnitee") intends to claim indemnification under this Article 12, the Indemnitee shall notify the other party (the "Indemnitor") in writing promptly upon becoming aware of any Claim that may be an Indemnification Claim. The Indemnitor shall have the right to assume and control the defense of the Indemnification Claim at its own expense. If the right to assume and have sole control of the defense is exercised by the Indemnitor, the Indemnitee shall have the right to participate in, but not control, such defense at its own expense and the Indemnitor's indemnity obligations shall not include any attorneys' fees and litigation expenses incurred by the Indemnitee after the assumption of the defense by the Indemnitor. If the Indemnitor does not assume the defense of the Indemnification Claim, the Indemnitee may defend the Indemnification Claim but shall have no obligation to do so. The Indemnitee will not settle or compromise the Indemnification Claim without the prior written consent of the Indemnitor, and the Indemnitor will not settle or compromise the Indemnification Claim in any manner which would have an adverse effect on the Indemnitee's rights under this Agreement or the scope or enforceability of the BMS Patents Rights or BMS Know-How, without the prior written consent of the Indemnitee, which consent, in each case, will not be unreasonably withheld. The Indemnitee shall reasonably cooperate with the Indemnitor at the Indemnitor's expense and will make available to the Indemnitor all pertinent information under the control of the Indemnitee.

12.4 INSURANCE. Vanda will, beginning with the initiation of the first clinical trial for the Product, maintain at all times thereafter during the term of this Agreement, and until the later of (a) [*] after termination or expiration of this Agreement or (b) the date that all statutes of limitation covering claims or suits that may be brought for personal injury based on the sale or use of a Product have expired in all states in the U.S.A., [*] insurance from a [*], and with coverage limits of not less than [*] per occurence and [*] in the aggregate. The minimum level of insurance set forth herein shall not be construed to create a limit on Vanda's liability hereunder. Within [*] following written request

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from BMS, Vanda shall furnish to BMS a certificate of insurance evidencing such coverage as of the date. Each such certificate of insurance, as well as any certificates evidencing new or modified coverages of Vanda, shall include a provision whereby [*] written notice must be received by BMS prior to coverage modification or cancellation by either Vanda or the insurer and of any new or modified coverage. In the case of a modification or cancellation of such coverage, Vanda shall promptly provide BMS with a new certificate of insurance evidencing that Vanda's coverage meets the requirements in the first sentence of this Section.

## ARTICLE 13
## TERM AND TERMINATION

13.1 TERM. This Agreement shall commence upon the Effective Date and, unless sooner terminated in accordance with the terms hereof or by mutual written consent, shall continue until neither Party has any obligation to the other remaining hereunder.

13.2 TERMINATION BY BMS. BMS shall have the right to terminate this Agreement, at BMS' sole discretion, upon delivery of written notice to Vanda, upon the occurrence of any of the following:

13.2.1 INSOLVENCY. Upon the filing by Vanda in any court or agency pursuant to any statute or regulation of the United States or any other jurisdiction a petition in bankruptcy or insolvency or for reorganization or similar arrangement for the benefit of creditors or for the appointment of a receiver or trustee of Vanda or its assets, upon the proposal by Vanda of a written agreement of composition or extension of its debts, or if Vanda is served with an involuntary petition against it in any insolvency proceeding, upon the [*] after such service if such involuntary petition has not previously been stayed or dismissed, or upon the making by Vanda of an assignment for the benefit of its creditors; or

13.2.2 BREACH. In the event of any material breach by Vanda of any terms and conditions of this Agreement, including failure to use Commercially Reasonable Efforts to Develop or Commercialize a Product or Compound, provided that such breach has not been cured within [*] after written notice thereof is given by BMS to Vanda; provided, that if such breach relates to the failure to make a payment when due, such breach must be cured within [*] after written notice thereof is given by BMS.

13.2.3 TERMINATION FOR FAILURE TO EFFECT COMMERCIAL LAUNCH. If Vanda is obligated to Commercialize a Product and fails to effect a commercial launch in a Major Market Country within [*] of achieving an Approval for such Product in such country; provided however, (i) that if the failure to launch in such Major Market Country is a consequence of [*] and provided, further, (ii) that subpart (i) of this Section

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13.2.3 may not be used to excuse launch, with respect to the [*]. Termination under this Section 13.2.3 shall apply only to the [*] affected by such failure to launch; provided, that (iii) if such failure relates to a [*] and (iv) [*] Nothing in the foregoing shall relieve Vanda of its obligation to use Commercially Reasonable Efforts to Commercialize a Product once launched in a country.

13.2.4 SCOPE OF TERMINATION. Termination under Sections 13.2.1 and 13.2.2 shall be as to all countries and all Products.

13.3 TERMINATION BY VANDA. Subject to Section 13.3.4, Vanda shall have the right to terminate this Agreement, at Vanda's sole discretion, upon delivery of written notice to BMS, upon occurrence of any of the following:

13.3.1 TERMINATION FOR ANY REASON. At Vanda's discretion, on a country-by-country and Product-by-Product basis, it may terminate this Agreement for any reason; provided however, such termination shall be effective not sooner than [*] after written notice thereof; and further provided, however, that no such termination right may be exercised as-to-any Major Market Country unless all Major Market Countries are so terminated unless such termination in a Major Market Country is a consequence of lack of commercial feasibility in such Major Market Country due to the pricing/reimbursement received for the Product in such Country, in which event Vanda may terminate its license in such Major Market Country only.

13.3.2 TERMINATION FOR BMS' FAILURE TO EFFECT COMMERCIAL LAUNCH. If BMS is obligated to Commercialize a Product and fails to effect a commercial launch within [*] of achieving the first Approval for such Product in a given Major Market Country; provided however, if the failure to launch in such Major Market Country is a consequence of lack of commercial feasibility due to the pricing/reimbursement received for the Product in such Country or safety issues, then this Section 13.3 shall not apply to such failure to launch.

13.3.3 TERMINATION FOR BMS' CESSATION OF DEVELOPMENT. If BMS elects to cease development of a Product in its discretion with respect to a given Major Market Country for a period exceeding [*] (other than for safety reasons or regulatory reasons).

13.3.4 SCOPE OF TERMINATION. Termination under Sections 13.3.2 and 13.3.3 shall only be as to the countries affected by the BMS action in question and not to the entire agreement (unless such BMS action affects all Major Market Countries).

13.4 EFFECT OF TERMINATION.

13.4.1 Upon termination of this Agreement under Section 13.2.1 or 13.2.2 hereof or, with respect to each applicable country as to which termination occurs pursuant to Section 13.2.3 or 13.3.1 hereof (the rights of Vanda in the remaining countries of the

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Territory in which termination under Section 13.2.3 or 13.3.1 has not occurred being unaffected by such termination):

(a) All rights and licenses granted to Vanda in Article 2 shall terminate with respect to each terminated country, all rights, title and interests to the BMS Patent Rights and BMS Know-How in each terminated country shall revert to BMS, and Vanda shall cease all use of the BMS Patent Rights and BMS Know-How with respect to each terminated country; and

(b) All regulatory filings (including all INDs and NDAs) and Approvals relating to the Compounds and any Product (and all of Vanda's rights, title and interests therein) in each terminated country shall be assigned to BMS, and Vanda shall provide to BMS one copy of all documents and filings contained in or referenced in any such filings, together with the raw and summarized data for any preclinical and clinical studies of the Compounds and Products. BMS shall have the right to obtain specific performance of Vanda's obligations referenced in this Section 13.4.1(b) and/or in the event of failure to obtain assignment, Vanda hereby consents and grants to BMS the right to access and reference (without any further action required on the part of Vanda, whose authorization to file this consent with any Regulatory Authority is hereby granted) any and all such regulatory filings for any regulatory or other use or purpose in each terminated country; and

(c) All amounts due or payable to BMS that were accrued, or that arise out of acts or events occurring, prior to the effective date of termination shall remain due and payable; but no additional amounts will be payable based on events occurring after the effective date of termination; and

(d) BMS shall have the right to retain all amounts previously paid to BMS by Vanda; and

(e) Should Vanda have any inventory of Compound suitable for use in clinical trials in each terminated country, Vanda shall offer to sell such Compound to BMS [*] (but BMS shall be under no obligation to purchase same unless it agrees to do so in writing at such time); and

(f) Should Vanda have any inventory of Product approved and allocated prior to termination for sale in a terminated country, Vanda shall have [*] thereafter in which to dispose of such inventory (subject to the payment to BMS of any royalties due hereunder thereon);

(g) Vanda will disclose to BMS its manufacturing patents, processes, techniques and trade secrets for making the Product and BMS will automatically have an exclusive, perpetual, worldwide, sublicensable right and license under know-how and patents Controlled by Vanda and its Affiliates relating to any composition, formulation, method of use or manufacture of the Compounds and Products solely for (i) using, importing, selling and offering for sale the Compounds and Products in the terminated countries and (ii) making and having made the Compounds and

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Products anywhere in the world for use, importation, sale and offer for sale in the terminated countries;

(h) Vanda shall assign to BMS any trademark or trade dress that is specific to a Product (it being understood that the foregoing shall not include any trademarks or tradenames that contain the name "Vanda") in each terminated country;

(i) Vanda shall assign to BMS its right, title and interest in any Sole Inventions and Joint Inventions (and any patent applications filed thereon and patents issued thereon) pertaining to the composition of matter or method of use or utility of the Compounds or Products in each terminated country; and

(j) Neither Party shall be relieved of any obligation that accrued prior to the effective date of such termination.

It is understood and agreed that BMS shall be entitled to specific performance as a remedy to enforce the provisions of this Section 13.4.1, in addition to any other remedy to which it may be entitled by applicable law.

13.4.2 In the event Vanda terminates the Agreement, in whole or in part (in accordance with Section 13.3.4), pursuant to Section 13.3.2 or 13.3.3:

(a) BMS shall grant Vanda all necessary rights and licenses on the same terms and conditions set forth in Article 2, to the BMS Patent Rights and BMS Know-How solely for use in a terminated country; and

(b) All regulatory filings (including all INDs and NDAs) and Approvals relating to the Compounds and any Product (and all of BMS' rights, title and interests therein) in a terminated country shall be assigned to Vanda, and BMS shall provide to Vanda one copy of all documents and filings contained in or referenced in any such filings, together with the raw and summarized data for any preclinical and clinical studies of the Compounds and Products. In the event of failure to obtain assignment, BMS hereby consents and grants to Vanda the right to access and reference (without any further action required on the part of BMS, whose authorization to file this consent with any Regulatory Authority is hereby granted) any and all such regulatory filings for any regulatory or other use or purpose with respect to each terminated country; and

(c) All amounts due or payable to Vanda that were accrued, or that arise out of acts or events occurring, prior to the effective date of termination shall remain due and payable, but no additional amounts will be payable based on events occurring after the effective date of termination; and

(d) Vanda shall have the right to retain all amounts previously paid to Vanda by BMS; and

(e) BMS shall assign to Vanda any trademark or trade dress that is specific to a Product in such terminated country (it being understood that the

foregoing shall not include any trademarks or tradenames that contain the name "BMS"); and

(f) Vanda shall thereafter pay milestones and royalties to BMS in accordance with Sections 8.2.1 and 8.5.1.

The remedies set forth in this Section 13.4.2 shall be Vanda's sole and exclusive remedy for breach by BMS of its Development and/or Commercialization obligations under this Agreement.

13.5 SURVIVAL. Except as expressly provided herein, the following provisions shall survive early termination of this Agreement, as well as any other provisions which by their nature are intended to survive termination: Sections 4.2, 8.9.2, 9.4, 9.5, 10.1, 10.2, 10.4, 12.1, 12.2, 12.3, 12.4, 13.4.1(b), 13.4.1(f), 13.4.1(g), 13.4.2(b), 13.4.2(f), 13.5 and 13.6 and Articles 11 and 14.

13.6 BANKRUPTCY.

13.6.1 All rights and licenses granted under or pursuant to this Agreement, including amendments hereto, by each Party to the other Party are, for all purposes of Section 365(n) of Title 11 of the U.S. Code ("TITLE 11"), licenses of rights to intellectual property as defined in Title 11. Each Party agrees during the term of this Agreement to create and maintain current copies or, if not amenable to copying, detailed descriptions or other appropriate embodiments, to the extent feasible, of all such intellectual property. If a case is commenced by or against either Party (the "BANKRUPT PARTY") under Title 11, then, unless and until this Agreement is rejected as provided in Title 11, the Bankrupt Party (in any capacity, including debtor-in-possession) and its successors and assigns (including, without limitation, a Title 11 Trustee) shall, at the election of the Bankrupt Party made within 60 days after the commencement of the case (or, if no such election is made, immediately upon the request of the non-Bankrupt Party) either (i) perform all of the obligations provided in this Agreement to be performed by the Bankrupt Party including, where applicable and without limitation, providing to the non-Bankrupt Party portions of such intellectual property (including embodiments thereof) held by the Bankrupt Party and such successors and assigns or otherwise available to them or (ii) provide access or a license to the non-Bankrupt Party to all such intellectual property (including all embodiments thereof) held by the Bankrupt Party and such successors and assigns or otherwise available to them.

13.6.2 If a Title 11 case is commenced by or against the Bankrupt Party and this Agreement is rejected as provided in Title 11 and the non-Bankrupt Party elects to retain its rights hereunder as provided in Title 11, then the Bankrupt Party (in any capacity, including debtor-in-possession) and its successors and assigns (including, without limitation, a Title 11 Trustee) shall provide access or a license to the non-Bankrupt Party to all such intellectual property (including all embodiments thereof) held by the Bankrupt Party and such successors and assigns or otherwise available to them immediately upon the non-Bankrupt Party's written request therefor. Whenever the Bankrupt Party or any of its successors or assigns provides access or a license to the non-

Bankrupt Party to any of the intellectual property licensed hereunder (or any embodiment thereof) pursuant to this Section 13.7, the non-Bankrupt Party shall have the right to perform the obligations of the Bankrupt Party hereunder with respect to such intellectual property, but neither such provision nor such performance by the non-Bankrupt Party shall release the Bankrupt Party from any such obligation or liability for failing to perform it.

13.6.3 All rights, powers and remedies of the non-Bankrupt Party provided herein are in addition to and not in substitution for any and all other rights, powers and remedies now or hereafter existing at law or in equity (including, without limitation, Title 11) in the event of the commencement of a Title 11 case by or against the Bankrupt Party. The non-Bankrupt Party, in addition to the rights, power and remedies expressly provided herein, shall be entitled to exercise all other such rights and powers and resort to all other such remedies as may now or hereafter exist at law or in equity (including, without limitation, under Title 11) in such event. The Parties agree that they intend the foregoing non-Bankrupt Party rights to extend to the maximum extent permitted by law and any provisions of applicable contracts with Third Parties, including without limitation for purposes of Title 11, (i) the right of access or a license to any intellectual property (including all embodiments thereof) of the Bankrupt Party or any Third Party with whom the Bankrupt Party contracts to perform an obligation of the Bankrupt Party under this Agreement, and, in the case of the Third Party, which is necessary for the development, registration and manufacture of licensed products and (ii) the right to contract directly with any Third Party described in (i) in this sentence to complete the contracted work. Any intellectual property provided pursuant to the provisions of this Section 13.6 shall be subject to the licenses set forth elsewhere in this Agreement and the payment obligations of this Agreement, which shall be deemed to be royalties for purposes of Title 11.

## ARTICLE 14
## MISCELLANEOUS

14.1 PROVISIONS CONTRARY TO LAW. In performing this Agreement, the Parties shall comply with all applicable laws. Wherever there is any conflict between any provision of this Agreement and any law, the law shall prevail, but in such event the affected provision of this Agreement shall be limited or eliminated only to the extent necessary, and the remainder of this Agreement shall remain in full force and effect. In the event the terms of this Agreement are materially altered as a result of the foregoing, the Parties shall renegotiate in good faith the terms of this Agreement to resolve any inequities.

14.2 THIRD PARTY RIGHTS. Notwithstanding anything to the contrary in this Agreement, the grant of rights by BMS under this Agreement shall be subject to and limited in all respects by the terms of the applicable BMS in-license(s) pursuant to which BMS acquired any licensed rights, and all rights or sublicenses granted under this Agreement shall be limited to the extent that BMS may grant such rights and sublicenses under such BMS in-license(s).

14.3 NOTICES. Any notice required or permitted to be given by this Agreement shall be in writing and shall be delivered by hand or overnight courier with tracking capabilities or mailed postage prepaid by first class, registered or certified mail addressed as set forth below unless changed by notice so given:

If to Vanda:

Vanda Pharmaceuticals, Inc.
47 Hulfish Street, Suite 310
Princeton, New Jersey 08452
Attention: President

If to BMS:

Bristol-Myers Squibb Company
Route 206 and Province Line Road
Princeton, New Jersey 08450
Attention: Senior Vice President for Business Development

With a copy to the Vice President and Senior Counsel, Corporate and Business Development, at the same address.

Any such notice shall be deemed delivered on the date received. A Party may add, delete, or change the person or address to whom notices should be sent at any time upon written notice delivered to the Party's notices in accordance with this Section 14.3.

14.4 FORCE MAJEURE. Neither Party shall be liable for delay or failure in the performance of any of its obligations hereunder if such delay or failure is due to causes beyond its reasonable control, including, without limitation, acts of God, fires, earthquakes, strikes and labor disputes, acts of war, civil unrest or intervention of any governmental authority; provided, that the affected Party promptly notifies the other Party and further provided that the affected Party shall use its commercially reasonable efforts to avoid or remove such causes of non-performance and shall continue performance with the utmost dispatch whenever such causes are removed. When such circumstances arise, the Parties shall negotiate in good faith any modifications of the terms of this Agreement that may be necessary or appropriate in order to arrive at an equitable solution.

14.5 USE OF NAMES. Vanda, at its sole cost and expense, shall be responsible for the selection, registration and maintenance of all trademarks which it employs in connection with its activities conducted pursuant to this Agreement, if any, and shall own and control such trademarks. Nothing in this Agreement shall be construed as a grant to Vanda of rights, by license or otherwise, to the use of any trademarks, service marks, logos or the name of BMS for any purpose. Neither Party shall use the name or marks or logos of the other Party for any purpose without the prior written consent of such other Party.

14.6 ASSIGNMENT. Neither Party shall assign its rights or obligations under this Agreement without the prior written consent of the Party, except that:

14.6.1 BMS may, without Vanda's consent, assign all of its rights and obligations hereunder in connection with any transfer of all of the BMS Patent Rights and BMS Compound Know-How, to any Affiliate of BMS or another Third Party, (including, without limitation, a successor in interest); provided, that such Affiliate or assignee or successor in interest agrees in a writing provided to Vanda to be bound by the terms of this Agreement; and

14.6.2 Upon [*] advance written notice to BMS and subject to BMS approval, not to be unreasonably withheld, conditioned, or delayed, Vanda may assign all of its rights and obligations hereunder to an entity of equal or superior financial condition as Vanda or to an Affiliate (and so long as such assignment includes, without limitation, the Approvals, all manufacturing assets relating to this Agreement, and all rights and obligations under this Agreement), provided, that such entity or Affiliate shall have agreed prior to such assignment to be bound by the terms of this Agreement in a writing provided to BMS and provided that Vanda remains jointly and severally liable with such entity or Affiliate for the performance of this Agreement where assigned to a Third Party or an Affiliate;

14.6.3 Vanda may assign all of its rights and obligations hereunder without such consent to a successor in interest by reason of merger, consolidation or sale of substantially all of the assets of Vanda (and so long as such assignment or sale includes, without limitation, the Approvals, all manufacturing assets relating to this Agreement, and all rights and obligations under this Agreement), provided, that such successor in interest shall have agreed prior to such assignment or sale to be bound by the terms of this Agreement in a writing provided to BMS; and

14.6.4 Subject to the foregoing, this Agreement shall inure to the benefit of and be binding on the Parties' successors and assigns. Any assignment in violation of the foregoing shall be null and void and wholly invalid, the assignee in any such assignment shall acquire no rights whatsoever, and the non-assigning Party shall not recognize, nor shall it be required to recognize, such assignment

14.7 FURTHER ASSURANCES. Each Party agrees to do and perform all such further acts and things and shall execute and deliver such other agreements, certificates, instruments and documents necessary or that the other Party may deem advisable in order to carry out the intent and accomplish the purposes of this Agreement and to evidence, perfect or otherwise confirm its rights hereunder.

14.8 WAIVERS AND MODIFICATIONS. The failure of any Party to insist on the performance of any obligation hereunder shall not be deemed to be a waiver of such obligation. Waiver of any breach of any provision hereof shall not be deemed to be a waiver of any other breach of such provision or any other provision on such occasion or any succeeding occasion. No waiver, modification, release or amendment of any

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obligation under or provision of this Agreement shall be valid or effective unless in writing and signed by all Parties hereto.

14.9 CHOICE OF LAW AND JURISDICTION.

14.9.1 This Agreement shall be governed by, enforced, and shall be construed in accordance with the laws of the State of New York without regard to its conflicts of law provisions (other than section 5.1401 of the New York General Obligations Law).

14.9.2 Each Party irrevocably submits to the exclusive jurisdiction of (a) the Supreme Court of the State of New York, New York County, and (b) the United States District Court for the Southern District of New York, for the purposes of any suit, action or other proceeding arising out of this Agreement or out of any transaction contemplated hereby. Each Party agrees to commence any such action, suit or proceeding either in the United States District Court for the Southern District of New York or if such suit, action or other proceeding may not be brought in such court for jurisdictional reasons, in the Supreme Court of the State of New York, New York County. Each Party further agrees that service of any process, summons, notice or document by personal delivery, by registered mail, or by a recognized international express delivery service to such Party's respective address set forth above shall be effective service of process for any action, suit or proceeding in New York with respect to any matters to which it has submitted to jurisdiction in this Section 14.9. Each Party irrevocably and unconditionally waives any objection to the laying of venue of any action, suit or proceeding arising out of this Agreement or the transactions contemplated hereby in (i) the Supreme Court of the State of New York, New York County or (ii) the United States District Court for the Southern District of New York, and hereby and thereby further irrevocably and unconditionally waives and agrees not to plead or claim in any such court that any such action, suit or proceeding brought in any such court has been brought in an inconvenient forum.

14.9.3 Each Party hereto hereby waives to the fullest extent permitted by applicable law, any right it may have to a trial by jury in respect to any litigation directly or indirectly arising out of, under or in connection with this Agreement. Each Party hereto (a) certifies that no representative, agent or attorney of the other Party has represented, expressly or otherwise, that such other Party would not, in the event of litigation, seek to enforce that foregoing waiver and (b) acknowledges that it and the other Party hereto have been induced to enter into this Agreement, as applicable, by, among other things, the mutual waivers and certifications in this Section 14.9.

14.10 PUBLICITY.

14.10.1 Subject to Article 11, except as required by law, regulation or order, including, without limitation, laws, regulations and orders of the U.S. Securities and Exchange Commission, the National Association of Securities Dealers or any national stock exchange, and except as expressly provided herein, neither Vanda nor BMS shall make any public announcement concerning this Agreement, including but not

limited to the execution of this Agreement and the economic terms of this Agreement, without the prior written consent of the other Party. In the event of a public disclosure required by law or regulation, including without limitation, any required disclosure in any securities offering document, the Party making such announcement shall at least five business days prior to such disclosure provide the other Party with a copy of the proposed text of the disclosure, and such other Party shall be entitled to have its reasonable comments incorporated prior to such announcement, provided that provision of proposed text and incorporation of comments referenced above is consistent with the disclosing Party's legal or regulatory obligations.

14.10.2 Notwithstanding the foregoing, in the event that Vanda decides that it would like to issue a public announcement regarding the execution of this Agreement following such execution, Vanda shall submit the proposed form of such public announcement to BMS for its review and written approval. Absent such approval of BMS, Vanda may not make such a public announcement.

14.11 ENTIRE AGREEMENT. This Agreement constitutes the entire agreement between the Parties as to the subject matter of this Agreement, and supersedes and merges all prior negotiations, representations, agreements and understandings regarding the same.

14.12 COUNTERPARTS. This Agreement may be executed in counter-parts with the same effect as if both Parties had signed the same document. All such counterparts shall be deemed an original, shall be construed together and shall constitute one and the same instrument.

14.13 RELATIONSHIP OF THE PARTIES. Each Party is an independent contractor under this Agreement. Nothing contained herein is intended or is to be construed so as to constitute BMS and Vanda as partners, agents or joint venturers. Neither Party shall have any express or implied right or authority to assume or create any obligations on behalf of or in the name of the other Party or to bind the other Party to any contract, agreement or undertaking with any Third Party.

14.14 HEADINGS. Headings and captions are for convenience only and are not be used in the interpretation of this Agreement. Neither this Agreement nor any provision of this Agreement shall be construed for or against any Party because the Agreement as a whole, or any portion of it, was requested or drafted by such Party.

14.15 DISPUTE RESOLUTION. In the event of any dispute relating to this Agreement, prior to instituting any lawsuit, arbitration or other dispute resolution process on account of such dispute, the Parties shall attempt in good faith to settle such dispute first by negotiation and consultation between themselves, including referral of such dispute to the Chief Executive Officer of Vanda and the (a) President of the Pharmaceutical Research Institute of BMS for any dispute involving Development, or (b) the President of U.S. Primary Care of BMS for any dispute involving Commercialization. In the event said executives are unable to resolve such dispute or agree upon a mechanism to resolve such dispute within thirty (30) days of the first written request for dispute resolution under this

Section 14.15, then the Parties shall be free to pursue any remedy or rights available to either of them at law or in equity.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their respective duly authorized officers.

VANDA PHARMACEUTICALS, INC.

By:
---
(Signature)
Name: Mihael Polymeropoulos
Title: Chief Executive Officer
Date:
---

BRISTOL-MYERS SQUIBB COMPANY

By:
---
(Signature)
Name: James Palmer
Title: President, Pharmaceutical Research Institute
Date:
---

SCHEDULE 1.3

BMS COMPOUND PATENT RIGHTS AND DESCRIPTION OF THE COMPOUNDS

BMS-214778 is a [*].

BMS-330446 is a [*].

BMS Compound Patent Rights for BMS-214778

[*]

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SCHEDULE 1.7

BMS MANUFACTURING PATENT RIGHTS

None

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SCHEDULE 1.19

DEVELOPMENT PLAN

DEVELOPMENT TIMELINES FOR A PRODUCT CONTAINING BMS-214778

[*]

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BUDGET FOR A PRODUCT CONTAINING BMS-214778

[*]

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SCHEDULE 1.25

FTE RATE

[*]

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Exhibit 10.4

NDD-094
LICENSE AGREEMENT

between

Novartis Pharma AG,

Novartis AG

and

Vanda Pharmaceuticals, Inc.

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[*] CERTAIN INFORMATION IN THIS EXHIBIT HAS BEEN OMITTED AND FILED SEPARATELY WITH THE COMMISSION. CONFIDENTIAL TREATMENT HAS BEEN REQUESTED WITH RESPECT TO THE OMITTED PORTIONS.

NDD-094 LICENSE AGREEMENT

This LICENSE AGREEMENT (the "Agreement") dated the 4th day of June, 2004 (the "Effective Date") by and between Novartis Pharma AG, a corporation organized and existing under the laws of Switzerland and having its principal office at Lichtstrasse 35, 4056 Basel, Switzerland ("Novartis"), Novartis AG, a corporation organized and existing under the laws of Switzerland and having its principal office at Lichtstrasse 35, 4056 Basel, Switzerland ("Novartis AG") and Vanda Pharmaceuticals, Inc., a corporation organized and existing under the laws of the State of Delaware and having its principal office at 47 Hulfish Street, Suite 310, Princeton, NJ 08542, The United States ("Vanda"). Novartis, Novartis AG and Vanda may be referred to herein individually as a "Party" and collectively as the "Parties".

INTRODUCTION

WHEREAS, Novartis AG owns or has rights to certain Novartis Patents (as defined below) and Novartis AG and Novartis each have rights to Novartis Know-How (as defined below) related to the Product (as defined below) and the Compound (as defined below), and each has the right to grant certain rights and licenses thereunder as set forth herein, and

WHEREAS, Vanda has certain expertise in the development and commercialization of pharmaceutical products, and Vanda wishes to obtain certain licenses to the Compound for the purpose of developing and commercializing the Product, and

WHEREAS, Novartis AG and Novartis each wish to grant a license to Vanda in respect of such development and commercialisation.

NOW, THEREFORE, in consideration of the mutual promises, covenants and agreements hereinafter set forth, the sufficiency of which is hereby acknowledged, the Parties to this Agreement mutually agree as follows:

ARTICLE I
DEFINITIONS

For purposes of this Agreement, the following initially capitalized terms in this Agreement, whether used in the singular or plural, shall have the following meanings:

1.1 "Affiliate" shall mean any corporation, company, partnership, joint venture and/or firm which controls, is controlled by, or is under common control with a specified person or entity. For purposes of this Section 1.1, "control" shall be presumed to exist if one of the following conditions is met: (a) in the case of corporate entities, control of at least fifty per cent (50%) of the voting rights at a meeting of the board of directors or direct or indirect ownership of at least fifty percent (50%) of the stock or shares having the right to vote for the election of directors, and (b) in the case of non-corporate entities, direct or indirect ownership of at least fifty percent (50%) of the equity interest with the power to direct the management and policies of such non-corporate entities. The Parties acknowledge that in the case of certain entities organized under the laws of certain countries outside of the United States, the

maximum percentage ownership permitted by law for a foreign investor may be less than fifty percent (50%), and that in such cases such lower percentage shall be substituted in the preceding sentence, provided that such foreign investor has the power to direct the management and policies of such entity. Notwithstanding the foregoing venture capital investors in Vanda shall not be considered Affiliates of Vanda.

1.2 "Annex" or "Schedule" shall mean the annexes attached to the back of this Agreement. In the event of conflict between the drafting of the operative terms of the Agreement and the Annex, the operative terms of the Agreement shall prevail.

1.3 "Back-up Compound" shall mean a compound [*].

1.4 "Business Day" shall mean any day on which banking institutions in New York, New York and Basel are open for business.

1.5 "Commercialization" or "Commercialize" shall mean activities conducted by a Party either by itself or through a Third Party and directed to marketing, promoting, distributing, importing, exporting, offering for sale and selling a Product. When used as a verb, "Commercialize" means to engage in Commercialization.

1.6 "Commercializing Party" shall mean Vanda, except that "Commercializing Party" shall mean Novartis as soon as Novartis has exercised either the Scenario II Option or the Scenario III Option and thereby has elected to Commercialize the Product.

1.7 "Compound" shall mean the compound currently identified by Novartis and Novartis AG as NDD-094 or isomers or epimers thereof and any metabolites and salts thereof and more particularly described on Schedule 1.7.

1.8 "Confidential Information" has the meaning set forth in Section 8.1.

1.9 "Controlled" or "Controls", when used in reference to intellectual property, shall mean the legal authority or right of a Party hereto (or any of its Affiliates) to grant a license or sublicense of intellectual property rights to another party, or to otherwise disclose proprietary or trade secret information to such other Party, without breaching the terms of any agreement with a Third Party, infringing upon the intellectual property rights of a Third Party, or misappropriating the proprietary or trade secret information of a Third Party.

1.10 "Co-Promotion Agreement" has the meaning set forth in Section 2.1(b).

1.11 "Development Costs" shall mean all reasonable costs incurred by Vanda after the Effective Date in developing the Product in accordance with this Agreement, as set out in the Development Plan, which costs shall [*] and including:

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(a) all reasonable Out-of-Pocket Costs and expenses incurred;

(b) the reasonable direct and indirect costs of internal scientific, medical or technical personnel (including personnel expenses, travel expenses and infrastructure costs but for the avoidance of doubt, not including the costs of managerial, financial, legal or business development personnel) engaged in such efforts, which costs shall be determined based on the FTE Rate, unless another basis is otherwise agreed by the Parties in writing;

(c) the reasonable costs and expenses of clinical supplies for such efforts, including without limitation (i) supply cost of clinical supplies of the Product; (ii) costs and expenses incurred to purchase and/or package comparator or combination drugs or devices; and (iii) costs and expenses of disposal of clinical samples;

(d) the reasonable costs and expenses incurred in connection with manufacturing process development and validation, manufacturing scale-up and improvements, stability testing and quality assurance/quality control development; qualification and validation of Third Party contract manufacturers;

(e) the reasonable direct and indirect costs of senior management of Vanda to the extent reasonably related to the Product and

(f) all regulatory filing fees.

1.12 "Development Plan" shall mean the detailed plan drafted by Vanda and showing its intentions and estimated costs with respect to the development of the Compound.

1.13 "Effective Date" shall mean the date specified in the first paragraph of this Agreement.

1.14 "EMEA" shall mean the European Agency for the Evaluation of Medicinal Products.

1.15 "FDA" shall mean the U.S. Food and Drug Administration or its successor agency.

1.16 "Field of Use" shall mean application to all conditions, disorders and diseases in humans.

1.17 "First Commercial Sale" shall mean the first sale of a Product to a Third Party by a Party or an Affiliate or sublicensee of such Party in a country in the Territory following the obtaining of the applicable Regulatory Approval of such Product in such country.

1.18 "FTE Rate" shall mean a rate of $[*] per annum for the time of an employee for a full-time equivalent person year (consisting of a total of [*] hours per annum) of work, to be pro-rated on a daily basis (per annum amount to be divided by [*] to produce the rate per whole day consisting of [*] hours) if necessary, such rate to include all travel expenses.

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1.19 "Good Clinical Practice" shall mean the current Good Clinical Practice regulations promulgated by the FDA, published at 21 C.F.R Part 50 and 56 as such regulations may be amended, and such comparable regulations or standards as may be applicable with respect to the design, conduct, performance, monitoring, auditing, recording, analyses and reporting of clinical trials outside the United States.

1.20 "GMP" shall mean the current Good Manufacturing Practice regulations promulgated by the FDA, published at 21 C.F.R. Part 210 et seq. as such regulations may be amended, and such comparable regulations or standards as may be applicable with respect to Compound or Product(s) manufactured or sold outside the United States.

1.21 "Investigational New Drug Application" or "IND" has the meaning set forth in Section 2.2(a).

1.22 "Indemnified Party" has the meaning set forth in Section 10.3.

1.23 "Indemnifying Party" has the meaning set forth in Section 10.3.

1.24 "Infringement Claim" has the meaning set forth in Section 6.2(a).

1.25 "Joint Development Committee" or "JDC" shall mean the joint global development committee to be set up by Vanda and Novartis to coordinate the development and registration efforts described in this Agreement.

1.26 "Loss" has the meaning set forth in Section 10.1

1.27 "Major Market Country" means each and any of [*].

1.28 "NDA" or "New Drug Application" shall mean a new drug application and all amendments and supplements thereto filed with the FDA pursuant to 21 C.F.R. Section 314, the EMEA or an equivalent Regulatory Authority in a Major Market Country, requiring such filing, and including all documents, data and other information concerning a pharmaceutical product which are necessary for the gaining of Regulatory Approval seeking permission to market and sell the Product in a Major Market Country.

1.29 "NDA Acceptance" means the written notification by the FDA or its equivalent outside the United States, that the NDA has met all the criteria for filing acceptance pursuant to 21 C.F.R. Section 314.101 or such equivalent.

1.30 "NDA Filing" means the first submission of the NDA to the FDA, EMEA or its equivalent in a Major Market Country.

1.31 "Net Sales" shall mean [*], less the following deductions in respect of the Product (each as determined in accordance with International Accounting Standards ("IAS")) if not previously deducted or reimbursed or paid by a Third Party in the amount invoiced or received: (a) [*]

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[*]; (b) [*] to the extent included in the invoice price; (c) [*] to the extent included in the invoice price to the customer; (d) [*], in each case specifically identifiable as relating to Product; (e) [*]; (f) [*] to the extent actually allowed as agreed by the parties in writing, [*]. [*] shall be disregarded for purposes of calculating Net Sales.

In the event that the Product is sold as part of a combination product, the Net Sales of the Product, for the purposes of determining royalty payments, shall be determined by [*]. In the event that [*], Net Sales for purposes of determining royalty payments shall be mutually agreed by the Parties within a reasonable period of time prior to the first Regulatory Approval of such combination product based on [*], and such agreement shall not be unreasonably withheld.

1.32 "Novartis Know-How" shall mean any proprietary or nonproprietary information specific to the Compound or Product within the Field of Use and of a confidential nature necessary or useful for the manufacture, preparation or development of the Compound or Product Controlled by Novartis and/or Novartis AG during the term of this Agreement and shall include, without limitation, data, knowledge and information., including chemical, stability, pharmacological, toxicological, pre-clinical, clinical and manufacturing data, samples, documentation, analytical standards, and gene expression data, provided that Novartis Know-How shall not include [*].

1.33 "Novartis Monthly Average Exchange Rate" shall mean for a currency, the mathematical average of Reuters Daily Rates between 9:00 a.m. and 10 a.m. Basel time and the official European Central Bank daily rate fixed at 2 p.m. for each Business Day of a month, where applicable.

1.34 "Novartis Patents" shall mean those Patents Controlled by Novartis AG claiming Compound, Product, or their metabolites or any formulation of Compound, processes, uses and intermediates of the foregoing, including those listed on Annex 3 attached hereto. For the avoidance of doubt, such Novartis Patents shall not include patents for [*].

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1.35 "Out of Pocket Costs" shall mean, in accordance with International Accounting Standards, expenses incurred by a Party and for the avoidance of doubt, not including pre-paid amounts and capital expenditure.

1.36 "Patents" shall mean all rights under any patents or patent applications and any continuations, continuations-in-part, divisions, provisionals, substitutions, patents of addition, reissues, reexamination, renewals or extensions thereof (including any supplemental patent certificates) and any confirmation patent or registration patent and all foreign counterparts of any of the foregoing.

1.37 "Payee" has the meaning set forth in Section 5.6.

1.38 "Payor" has the meaning set forth in Section 5.6

1.39 "Person" shall mean any individual, corporation, partnership, association, joint-stock company, trust, unincorporated organization or government or political subdivision thereof.

1.40 "Phase I Clinical Trial" shall mean the first phase of human clinical trials of a drug required by the FDA to gain evidence of safety for Product(s), as described in 21 C.F.R. 312(a), as may be amended and deemed to commence on the date that the first patient is first dosed by or on behalf of Vanda.

1.41 "Phase II Clinical Trials" shall mean that portion of the FDA submission and approval process which provides for the initial trials of a Product on a limited number of patients for the purposes of determining dose and, evaluating safety and efficacy in the proposed therapeutic indication, as more fully defined in 21 C.F.R. 312.21(b) as may be amended and deemed to commence on the date that the first patient is first dosed by or on behalf of Vanda.

1.42 "Phase III Clinical Trials" shall mean that portion of the FDA submission and approval process which provides for the continued trials of a Product on sufficient numbers of patients to generate safety, efficacy and pharmacoeconomic data to support regulatory approval in the proposed therapeutic indication, as more fully defined in 21 C.F.R. 312.21(c) as may be amended and deemed to commence on the date that the first patient is first dosed by or on behalf of Vanda (and Novartis, if applicable).

1.43 "Primary Market Research Development" shall mean all market research activity undertaken by the Commercialising Party prior to the First Commercial Sale.

1.44 "Product" shall mean a formulated pharmaceutical product containing the Compound or Back-up Compound as an active ingredient and packaged for the use by the ultimate consumer.

1.45 "Reasonable Commercial Efforts" shall mean the efforts and resources [*].

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1.46 "Regulatory Approval" shall mean, with respect to a country or group of countries in the Territory, all authorizations by the appropriate Regulatory Authority, governmental entity or entities necessary for commercial sale of a Product in that country or group of countries including, without limitation and where applicable, approval of labeling, price, reimbursement and manufacturing.

1.47 "Regulatory Authority" shall mean the FDA, EMEA or any other counterpart or additional governmental or regulatory agencies responsible for applicable Regulatory Approvals.

1.48 "Scenario I Option" has the meaning set forth in Section 2.2(c).

1.49 "Scenario II Option" has the meaning set forth in Section 2.2(a).

1.50 "Scenario III Option" has the meaning set forth in Section 2.2(b).

1.51 "Sublicensee" shall mean a Person, other than a Vanda Affiliate, to whom Vanda grants any right or license to use Novartis Patents or Novartis Know-How or to make, use or sell any Product under all or part of Novartis' Patents or Novartis' Know-How in the Territory.

1.52 "Supply Agreement" has the meaning set forth in Section 3.2.

1.53 "Support" or "Supporting" shall mean the preparation, filing, prosecution, maintenance, renewal and defense of a Patent.

1.54 "Term" has the meaning set forth in Section 9.l(a).

1.55 "Territory" shall mean all the countries and territories of the world.

1.56 "Third Party" shall mean any Person or other entity other than Vanda, Novartis, Novartis AG or their respective Affiliates of rights conveyed under this Agreement.

1.57 "Valid Claim" shall mean (i) an unexpired or issued claim of a Novartis Patent which claim has not been held invalid or unenforceable by final decision of a court or other governmental agency of competent jurisdiction, unappealable or unappealed within the time allowed for appeal, and which is not admitted to be invalid or unenforceable through reissue, disclaimer or otherwise or (ii) pending patent application that is a Novartis Patent Right, which claim was filed in good faith and has not been abandoned or finally disallowed without the possibility of appeal or refiling of said application.

1.58 "Vanda Technology" means all Patents and know-how that are (i) generated, identified, discovered, created or made by Vanda, its employees or a Third Party on behalf of Vanda, (ii) controlled by Vanda, and (iii) necessary to manufacture, use, research, develop, sell or seek regulatory approval, including, without limitation, manufacturing processes, formulations, modes of delivery and methods of use for the Compound, Back-up Compound, or Products developed by Vanda pursuant to its development work with the Compound or the Back-up Compound.

ARTICLE 2
LICENSE

2.1 Grant to Vanda.

(a) Subject to the terms and conditions of this Agreement, on the Effective Date, Novartis and Novartis AG hereby grant to Vanda an exclusive license, with the right to sublicense with the prior written consent of Novartis and Novartis AG, such consent not to be unreasonably withheld, under the Novartis Patents and Novartis Know-How, to develop, use, make and have made Compound and Product in the Field of Use and in the Territory.

(b) Subject to the Scenario II Option pursuant to Section 2.2(a) and Scenario III Option pursuant to Section 2.2(b) and the Co-Promotion Option pursuant to Section 2.3(a) and (b), Vanda shall have an exclusive license to Commercialize the Compound and Product, with right to sublicense without consent.

(c) Novartis AG and Novartis retain all rights to Novartis Patents and Novartis Know-How except to the extent explicitly granted to Vanda hereunder.

2.2 Option

(a) Scenario II Option. Upon the execution of this Agreement, Vanda agrees and undertakes that it shall commence Phase II Clinical Trials for the Product on [*]. [*] shall be responsible for the conduct [*] of each of the Phase I Clinical Trials and Phase II Clinical Trials which it elects to conduct. Within [*] of the completion of the Phase II Clinical Trials, Vanda shall provide Novartis with a full written report of the results of the Phase II Clinical Trials, including the conclusions thereof. Upon request by Novartis, Vanda shall [*]. Novartis shall have [*] immediately following the delivery to Novartis of the final Phase II Clinical Trial report to provide notice of exercise to Vanda stating, that Novartis wishes to co-develop and Commercialize the Product (the "Scenario II Option").

Upon exercise of the Scenario II Option, Novartis shall [*] and Novartis shall [*]. After the exercise of the Scenario II Option, Vanda shall [*]. As per Section 4.2 below Novartis shall [*]. Subject only to the option to co-promote in Section 2.3(c) below, under Scenario II Novartis and its Affiliates shall have the exclusive rights for the Commercialisation of the Compound or Product and Vanda shall grant Novartis an exclusive license under the Vanda Technology.

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Upon the exercise of the Scenario II Option by Novartis the Scenario I Option, pursuant to Section 2.2(c) below and Scenario III Option pursuant to Section 2.2(b) below as well the Co-Promotion Option pursuant to Section 2.3 (a) and (b) shall be deemed expired.

(b) Scenario III Option. In the event that Novartis does not exercise its Scenario II Option, Vanda will consider the results of the Phase II Clinical Trial and may elect to commence Phase III Clinical Trials for the Product within [*] of the delivery of the final Phase II Clinical Trial report to Novartis. Vanda shall provide written notice of such election to Novartis. Upon such election, Vanda shall [*]. If Novartis does not receive such election notice within the [*] period, Novartis may terminate this Agreement according to Section 9.3. Within [*] of the completion of the Phase III Clinical Trials, Vanda shall provide Novartis with a full written report of the results of the Phase III Clinical Trials, including the conclusions thereof. The Phase III Clinical Trials shall be performed in accordance with a plan reviewed with the relevant Regulatory Authority in a post Phase IIB meeting and be approved by the JDC. Upon request by Novartis Vanda shall [*]. Novartis shall have [*] immediately following the delivery to Novartis of the final Phase III Clinical Trials report to provide written notice to Vanda of exercise stating, Novartis wishes to Commercialize the Product (the "Scenario III Option").

Upon exercise of the Scenario III Option, Novartis shall [*] and Novartis shall [*]. As per Section 4.2 below Novartis shall [*] immediately after the exercise of the Scenario III Option. Subject only to the option to co-promote in Section 2.3(c) below, under Scenario III Novartis and its Affiliates shall have the exclusive rights for the Commercialisation of the Compound or Product and Vanda shall grant Novartis and exclusive license under the Vanda Technology.

Upon the exercise of the Scenario III Option by Novartis the Scenario I Option pursuant to Section 2.2(c) below and the Co-Promotion Option pursuant to Section 2.3(a) and (b) shall be deemed expired.

(c) Scenario I Option. In the event that Novartis does not exercise the Scenario II Option or the Scenario III Option, Novartis shall be deemed to have exercised the Scenario I Option. Under Scenario I Vanda shall be fully responsible for the entire development, manufacturing and Commercialisation of the Compound and the Product. Subject to the option to co-promote in Section 2.3 (a) and (b) below, under Scenario I Novartis shall have no right or obligation to the Commercialisation of the Compound or Product. Within [*] of the last date for Novartis to exercise the Scenario III Option, but did not exercise such option, Vanda shall [*].

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(d) Good Clinical Practices. All Phase I Clinical Trials, Phase II Clinical Trials or Phase III Clinical Trials conducted by Vanda pursuant to this Agreement shall be conducted in accordance to Good Clinical Practice.

2.3 Co-Promotion Option.

(a) Novartis First Right of Refusal - If pursuant to section 2.2(c) above Novartis is deemed to have exercised its Scenario I Option, and Vanda decides to co-promote the product with a Third Party, Vanda shall notify Novartis in writing of its intention to co-promote the Products with such a co-promotion partner. Novartis will have [*] from the date Vanda notifies Novartis of its intention to co-promote the Product with a Third Party to provide written notice of its intent to exercise its option to co-promote the Product with Vanda and to negotiate in good faith a Co-Promotion Agreement on commercially reasonable terms and conditions.

(b) If after such [*] period, the Parties have not entered into a Co-Promotion Agreement, Vanda would be free to enter into an arrangement with [*]; provided, that Vanda will provide Novartis a last opportunity to submit a Matching counteroffer on terms no less favorable to Vanda than those terms last offered [*]. Vanda shall [*]; provided, however, that Vanda shall not be required to disclose the identity of such Third Party. Within [*] of Novartis' receipt of the written notice, Novartis will respond to Vanda in writing regarding Novartis' interest in Matching the counter-offer. During the same [*] period following receipt of such notice from Vanda, Novartis may submit to Vanda the counter-offer. Vanda shall consider such counteroffer from Novartis in good faith and agree to negotiate with Novartis in the event that the terms of such Novartis counteroffer are more favourable to Vanda than those of a bona fide definitive agreement negotiated by Vanda with a Third Party. As used herein, "Matching" shall mean [*] or (ii) [*].

(c) If Novartis exercises its Scenario II Option or Scenario III Option, and intends to co-promote the product in a Major Market Country with a Third Party, Novartis shall notify Vanda in writing of its intention to co-promote the Products with a co-promotion partner. Vanda will have [*] from the date Novartis notifies Vanda of its intention to co-promote the Product to provide written notice of its intent to exercise its option to co-promote the Product with Novartis on commercially reasonable terms and conditions to be negotiated in good faith and set forth in the Co-Promotion Agreement. If after [*] of such good faith negotiations there is no agreement on the

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terms of the Co-Promotion Agreement between the Parties, Novartis shall be free to co-promote the Product with a Third Party.

## ARTICLE 3
## MANUFACTURE AND SUPPLY

3.1 Provision of Compound. Within [*] of the Effective Date, Novartis will provide to Vanda, [*], 20 kg of Compound substance [*] as well as adequate data in connection with the development of the Compound and Product. Further Novartis shall sell to Vanda and Vanda shall buy [*] from Novartis the remaining Compound available at Novartis in addition to the 20 kg specified in this Section 3.1 at the terms and conditions specified in Schedule 3.1. For the avoidance of doubt, Novartis makes no representation or warranty that any quantities of Compound provided to Vanda under this Agreement will meet the GMP standards,

3.2 Right to Manufacture Clinical Supply. Within [*] of the Effective Date, the Parties shall determine whether Novartis will manufacture and supply to Vanda the clinical supplies of Compound and/or Product, and the parties shall negotiate the terms and conditions of a clinical supply agreement pursuant to which the Compound shall be supplied. To the extent that the Parties do not enter into an agreement for the supply of Compound for clinical purposes within [*], then Novartis shall co-operate in all reasonable respects to transfer such Novartis Know-How to Vanda and provide such other assistance reasonably necessary in order to enable Vanda or a Third Party to supply clinical supplies of Compound and/or Product.. Novartis shall have exclusive rights to manufacture the Compound and Product in the event that Novartis exercises either the Scenario II Option or the Scenario III Option.

3.3 Transfer of Novartis Know-How and Novartis Patent Files. In furtherance of the activities contemplated by this Agreement, Novartis and Novartis AG each shall, or shall cause its Affiliates to, transfer as promptly as possible to Vanda the Novartis Know-How and the files of the Novartis Patents, including copies of all relevant laboratory notebook information, screening data and synthesis schemes clinical trial information and clinical trial raw and derived datasets, which includes description in any forms, data and other information disclosed or transferred to Vanda before the Effective Date. Banked DNA samples and or animal tissues treated with the compound will only be made available to Vanda for further studies in accordance with the protocols and informed consents set forth at the time of sample acquisition provided however that no human tissue samples with identifiable patient data will be transferred to Vanda. All raw data and individual clinical and genetic data will be transferred to Vanda under a mutually agreed coding schema, in order to protect patient confidentiality. All original identifiable patient data will, however be provided to the FDA as part of the submission package. If Vanda requires additional genotyping on existing samples, Novartis will contract this work out, in accordance with the informed consents, on Vanda's

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behalf [*]. If further DNA samples from past study patients are desired, Vanda will revisit the sites and try to consent or reconsent these patients for additional DNA sampling. Novartis and Vanda shall [*]. In addition, Novartis and Novartis AG shall make a Novartis representative familiar with the Novartis Know-How and the files of the Novartis Patents reasonably available within reasonable office hours of the relevant employee to assist Vanda with the transfer as well as to answer any questions Vanda may have concerning such transferred information. In the event a translator is necessary or any of the materials need to be translated into English, the Parties shall [*]. Upon Novartis' exercise of the Scenario II option Vanda shall [*].

3.4 Transfer of Pharmacovigilance obligations and IND. In furtherance of the activities contemplated by this Agreement, Novartis and Novartis AG each shall, or shall cause its Affiliates to, transfer to Vanda the IND, including copies of all relevant registration dossiers. Such transfer shall however be subject to the transfer of all Pharmacovigilance obligations, with respect to clinical trials of Products performed prior to the Effective Date by Novartis to Vanda or Vanda's Affiliates.

## ARTICLE 4
## DEVELOPMENT AND COMMERCIALIZATION

4.1 Development. Subject to the exercise by Novartis of either the Scenario II Option or the Scenario III Option, Vanda shall be responsible for overall development and regulatory filings for the Product in the Territory. Vanda shall use its Reasonable Commercial Efforts to perform its obligations under this Agreement and cause or cause to be done, all things necessary to perform the obligations contemplated hereby. Vanda shall use Reasonable Commercial Efforts to make all registrations, filings and applications, to give all notices to the relevant Regulatory Authority and obtain any governmental transfers, approvals, orders, qualifications and waivers necessary or desirable for the commercialisation of the Product hereby.

4.2 The JDC shall be set up within four (4) weeks of the Scenario II Option and shall be comprised of at least one member from Vanda and Novartis respectively (or further equal numbers from both Parties on an ad hoc basis as is agreed), plus the chairman [*] to assist in a consistent and harmonized development of the Product under this Agreement, it being understood that each member shall be entitled and expected to consult with their organization. The JDC shall discuss development and registration issues and shall co-ordinate the development and registration efforts described in this Agreement. Meetings of the JDC shall be at such times and places and in such form (e.g., in person, telephonic or video conference) as the members of the JDC shall determine but shall meet at least once every [*]. Representatives of both Novartis and Vanda shall be present at any meeting of the JDC. Decisions of the JDC shall be made by a majority vote at a telephone or video conference or by a written consent signed by

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[*]. The JDC shall keep minutes of its deliberations (or appoint a secretary to do so) setting forth, amongst other matters, all proposed actions and all votes thereon.

4.3 All records of the JDC shall at all times be available to the Parties. The JDC may delegate to one Party or to a specific representative the authority to make certain decisions. The costs incurred by each Party through its participation in the JDC shall [*].

4.4 [*] Reports. While the Compound is under development and until the completion of Phase II and Phase III Clinical Trials, Novartis will receive reports every [*] within [*] after the end of [*]. Such reports shall set forth in summary form the results of development work performed and costs incurred during the preceding [*] period and the planned development work, time-lines, launch plans, estimated costs to be incurred and commercialisation to be performed [*] and explain to Novartis in detail the reasons for [*].

4.5 [*] in Development. If either (1) Vanda should decide to discontinue the development of the Compound into Product or (2) if a time period of more than [*] elapses [*] prior to [*] or (3) more than [*] elapses between [*], it shall promptly notify Novartis in person and in writing and all licenses granted hereunder will thereupon automatically terminate. Vanda will make available to Novartis all results of development work carried out up to the point of discontinuance and Novartis shall have a non-exclusive license to use all such results of the Vanda Technology solely for use in any future development or commercialisation work to be carried out in respect of the Compound, Product or Back-up Compound. Should the Compound ultimately become a commercialized Product, a [*] % royalty on Net Sales will be payable to Vanda by Novartis where such Net Sales are [*]. For [*], Novartis shall pay to Vanda a royalty of [*] per cent on Net Sales for a period of five (5) years after the First Commercial sale of a Product.

4.6 Regulatory and Marketing Efforts

(a) Market Launch. The Commercializing Party shall use Reasonable Commercial Efforts to seek marketing authorizations in Major Market Countries and effect the introduction of Product into Major Market Countries within [*] of such Product completing the Regulatory Approval process..

(b) [*]. Subject to the terms and conditions of the Co-Promotion Agreement, if entered into by the Parties, [*] shall be responsible for [*] all Commercialization of Product in the

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Territory. [*] shall have sole responsibility for all Primary Market Research Development

4.7 Commercialisation. [*] shall have full responsibility for the costs of the Commercialisation unless otherwise agreed in writing by the parties.

## ARTICLE 5
## PAYMENTS

5.1 Upfront Payment. Within [*] of the Effective Date, Vanda shall pay to Novartis an upfront payment of [*].

5.2 [*]. Vanda shall pay to Novartis [*] a milestone payment upon [*] should Vanda's aggregate expenditure on [*] not reach [*]. If upon the [*], Vanda's cost of [*] exceeds, and is less than [*], Vanda will pay to Novartis a milestone payment equal to [*] minus the cost of [*].

5.3 Outside Funding from a Third Party. If Novartis has not exercised its Scenario II Option and Vanda needs outside funding to support further development, Vanda will provide written notice to Novartis of Vanda's intention to seek a Third Party partner to assist Vanda with the continued development of the Compound. Novartis will have [*] from its receipt of such notice to inform Vanda if Novartis is willing to provide a secured interest-bearing loan facility to Vanda on terms to be negotiated, to be used to fund all subsequent development costs that Vanda may need to complete its obligations as set out in the Development Plan (or the Development plan amendments as approved by the JDC). In the event that Vanda receives debt funding from a Third Party it shall not grant any interest to that Third Party which conflict with its obligations to Novartis. If Vanda requests that Novartis relinquish Novartis' Scenario III Option rights (primarily for the purposes of securing Third Party outside funding), financial consideration for these rights shall be negotiated between Vanda and Novartis.

5.4 Milestone Payments by Vanda

(a) Scenario I Milestone Payments. In the event that Novartis does not exercise its Scenario II Option or Scenario III Option, and Vanda continues with the development, manufacture and Commercialization of the Product, then Vanda will pay to Novartis or Novartis AG (as specified) upon achieving the following milestones in addition and not instead of any payments received prior to such milestones:

| MILESTONE | UNITED STATES DOLLARS | |
|---|---|---|
| [*] | [*] | to Novartis AG |

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[*] [*]
to
Novartis
AG [*]
[*] to
Novartis

Each such milestone shall be payable [*] upon the [*].

5.5 Milestone Payments by Novartis

(a) Scenario II Milestone Payments. In the event that Novartis exercises its Scenario II Option, then, Novartis shall pay to Vanda the following milestones:

| MILESTONE UNITED STATES DOLLARS | |
|---|---|
| [*] | [*] |
| [*] | [*] |
| [*] | [*] |
| [*] | [*] |

Each such milestone shall be payable [*] upon [*].

(b) Scenario III Milestone Payments. In the event that Novartis exercises its Scenario III Option, Novartis shall pay to Vanda the following milestones:

| MILESTONE UNITED STATES DOLLARS | |
|---|---|
| [*] | [*] |
| [*] | [*] |
| [*] | [*] |

Each such milestone shall be payable [*] upon [*].

5.6 Timing.

Payment to be made by one Party (the "Payor") to the other ("Payee") shall be made within [*] after its receipt of notification by the Payee of the occurrence of a milestone event giving rise to a payment obligation hereunder, with an accompanying invoice from the Payee. All payments shall be made by wire transfer in United States Dollars to the credit of such bank account as may be designated, from time to time, by the Payor in writing. Vanda may receive a milestone amount stated in this clause (if payable) [*] from the applicable paying Party.

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5.7 Development Costs.

(a) Scenario I or Scenario III Development Costs. In the event that either the Scenario I Option or Scenario III Option applies, [*] will be responsible for all Development Costs for Product.

(b) Scenario II Development Costs. In the event that Novartis exercises its Scenario II Option, Novartis will [*]. Thereafter, Novartis shall pay [*] and Vanda will provide Novartis with [*] invoices for [*] and Novartis will pay such invoices within [*] of the date of such invoice. Vanda shall [*].

5.8 Royalties.

(a) Payment.

(i) Scenario I Royalty. In the event that Novartis does not exercise its Scenario II Option or Scenario III Option, Vanda will pay to Novartis a [*] percent ([*]%) royalty on annual Net Sales of Product by Vanda, its Affiliates and Sublicensees in the Territory in consideration of the license granted under the Novartis Know-How and Novartis Patents.

(ii) Scenario II Royalty. In the event that Novartis exercises its Scenario II Option, Novartis will pay to Vanda a [*] percent ([*]%) royalty on annual Net Sales of Product by Novartis, its Affiliates and Sublicensees in the Territory in consideration of the license granted under the Vanda Technology.

(iii) Scenario III Royalty. In the event that Novartis exercises its Scenario III Option, Novartis will pay to Vanda a [*] percent ([*]%) royalty on annual Net Sales of Product by Novartis, its Affiliates and Sublicensees in the Territory in consideration of the license granted under the Vanda Technology.

(iv) Each of the foregoing shall be collectively and individually referred to as "Royalties".

(b) Royalty Offset for Third Party Royalty Payments. The Commercialising Party may require additional patented technologies to which no Party has rights, from a Third Party, in order to develop, manufacture and Commercialize the Compound or Products. As between Novartis and Vanda, the Commercialising Party shall have the right to deduct [*] ([*]%)of such third person royalty or consideration from the royalty owed to the other Party on Net Sales of the Product in such country, provided that any deduction under this Section shall not exceed [*] ([*]%) of the royalty percentage (e.g. [*]) otherwise due to the other Party for Net Sales from that country.

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(c) Royalty Offset for Third Party Intellectual Property Infringement. As between Novartis and Vanda and in the event that the manufacture, use or sale of Compound or Product in any country infringes a Third Party patent and the Commercialising Party must pay to a Third Party a royalty or consideration accordingly, the Commercialising Party shall have the right to deduct such third person royalty or consideration from the royalty owed to the other Party on Net Sales of the Product in such country, provided that any deduction under this Section shall not exceed [*] ([*]%) of the royalty percentage [*] otherwise due to the other Party for Net Sales from that country, and provided further that such deduction shall be in addition to any indemnification for breach of representation that such Party may be entitled to receive under this Agreement.

(d) Countries With No Valid Claim Covering Product. As between Novartis and Vanda and for countries where there is no Valid Claim of an applicable Patent related to the Compound or Product or a method of use thereof, Royalty amounts payable by the Commercialising Party with respect to the Net Sales of Product in such country shall be reduced by [*] percent ([*]%).

(e) As between Novartis and Vanda and the maximum Royalty relief which may be claimed by the Commercialising Party in respect of this Section 5.8 in any one country is [*] percent ([*]%) of the royalty otherwise due to the other Party.

(f) Term for Royalty Payments. Royalties shall be payable on a country by country basis from the First Commercial Sale until the later of either the last applicable Patent to expire (including extensions thereof) with a Valid Claim which in absence of the license would be infringed by the Compound, the Product or a method of use thereof, or five (5) years from the date of First Commercial Sale of a Product.

5.9 Sales Reports.

(a) Substance of Reports. After the First Commercial Sale of Product and during the term of this Agreement, the Commercializing Party shall furnish or cause to be furnished to the other Party on a [*] basis no later than [*] after the end of the preceding [*] a written report showing the Net Sales of Product in each country in the Territory.

(b) Timing. Final yearly reports shall be due on [*] following the close of the calendar year.

(c) Records. The Commercializing Party shall keep accurate records in sufficient detail to enable the amounts due hereunder to be determined and to be verified by an independent certified public accountant mutually agreed upon by the Parties pursuant to Section 5.4(e).

(d) Vanda Currency Exchange. With respect to payments to be made by Vanda to Novartis in respect of Net Sales invoiced in United States Dollars, the Net Sales and

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the amounts due to Novartis hereunder shall be expressed in United States Dollars. With respect to Net Sales invoiced in a currency other than United States Dollars, the Net Sales shall be expressed in the domestic currency of the entity making the sale, together with the Dollar equivalent, calculated using the arithmetic average of the spot rates on the last Business Day of each month of the calendar quarter in which the Net Sales were made. The "closing mid-point rates" found in the "dollar spot forward against the dollar" table published by The Financial Times or any other publication as agreed to by the Parties shall be used as the source of spot rates to calculate the average as defined in the preceding sentence. All payments shall be made in United States Dollars. If at any time legal restrictions in any country in the Territory prevent the prompt remittance of any payments with respect to sales in that country, Vanda shall have the right and option to make such payments by depositing the amount thereof in local currency to Novartis' account in a bank or depository in such country.

(e) Novartis Currency Exchange. With respect to royalty payments to be made by Novartis to Vanda in relation to Net Sales invoiced in United States Dollars, payments to Vanda by Novartis shall be made in United States Dollars. With respect to the calculation of royalty payments to be made by Novartis to Vanda in relation to Net Sales invoiced in a currency other than United States Dollars, for the conversion of the Net Sales amount into United States Dollars, the Novartis Monthly Average Exchange Rate or such other standard methodology for currency conversion as employed by Novartis at that time, shall be used.

(f) In the event of a co-commercialization between Vanda and Novartis, local payments to be made between Vanda and Novartis shall be made in the applicable local currency.

(g) Royalty Payment Due Date; Accrual. Royalties which have accrued during any calendar year and are required to be shown on a sales report provided for under this Section 5.4 (a) of this Agreement shall be due and payable on the date such sales report is due.

(i) The Commercializing Party, its Affiliates and Sublicensees shall keep for [*] from the date of each payment of royalties complete and accurate records of sales by the Commercializing Party and its Affiliates and Sublicensees of Product in sufficient detail to allow the accruing royalties to be determined accurately.

(ii) The non-Commercializing Party shall have the right for a period of [*] after receiving any report or statement with respect to royalties due and payable to appoint an independent certified public accountant reasonably acceptable to the Commercializing Party to inspect the relevant records of the Commercializing Party and its Affiliates and Sublicensees to verify such report or statement not more than [*].

(iii) The Commercializing Party and its Affiliates and Sublicensees shall each make its records available for inspection by such independent certified public accountant during regular business hours at such place or

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places where such records are customarily kept, upon reasonable notice from the non-Commercializing Party, solely to verify the accuracy of the reports and payments. Such inspection right shall not be exercised [*].

(iv) The non-Commercializing Party agrees to hold in strict confidence all information concerning royalty payments and reports, and all information learned in the course of any audit or inspection (and not to make copies of such reports and information), except to the extent necessary for the non-Commercializing Party to reveal such information in order to enforce its rights under this Agreement or if disclosure is required by law, regulation or judicial order. The results of each inspection, if any, shall be binding on both Parties.

(v) The non-Commercializing Party shall pay for such inspections, except that in the event there is any upward adjustment in aggregate royalties payable for any year shown by such inspection of [*] ([*]%) of the amount paid, the Commercializing Party shall pay for such inspection. Any overpayments shall be fully creditable against amounts payable in subsequent payment periods.

(vi) The Commercializing Party shall include in each sublicense or marketing agreement entered into by it pursuant to this Agreement a provision requiring the Sublicensee or marketing partner to keep and maintain adequate records of sales made pursuant to such sublicense or marketing agreement and to grant access to such records by the aforementioned independent public accountant for the reasons specified in this Section.

5.10 Tax Withholding. The withholding tax, duties, and other levies (if any) applied by a government of any country of the Territory on payments made by one Party (the "Payor") to the other ("Payee") hereunder shall be borne by [*]. [*] shall cooperate with [*] to enable [*] to claim exemption therefrom under any double taxation or similar agreement in force and shall provide to Payee proper evidence of payments of withholding tax and assist [*] by obtaining or providing in as far as possible the required documentation for the purpose of [*] tax returns.

5.l1. Interest Due. In case of any delay in payment by Vanda to Novartis not occasioned by Force Majeure, interest on the overdue payment shall accrue at an annual interest rate, compounded monthly, equal to the three month London Interbank Offer Rate (LIBOR) as determined for each month on the last Business Day of that month, assessed from the day payment was initially due. The foregoing interest shall be due from Vanda without any special notice.

5.12 Payments to Novartis. A11 payments to be made by Vanda shall be made to the following bank account of Novartis and Novartis AG:

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Bank: [*]
Swift: [*]
Correspondent Bank for USD: [*]
USD Account Novartis AG, Basel / Switzerland: [*]
USD Account Novartis Pharma AG, Base1 / Switzerland:[*]

5.13 Pavements to Vanda. All payments to be made by Novartis shall be made to the following bank account of Vanda:

[*]
ABA: [*]
Account #: [*]
Account Name: [*]

## ARTICLE 6
## INTELLECTUAL PROPERTY

6.1 Novartis Patentable Inventions and Know-How.

Any invention made by Novartis shall be owned by Novartis and any invention made by Vanda shall be owned by Vanda.

(a) Novartis Patent Prosecution.

(i) During the term of the Agreement, [*] shall, diligently and in the reasonable exercise of its commercial discretion, Support the Novartis Patents in the countries where such Novartis Patents are filed as of the Effective Date. Except as provided in Paragraph 6.l(a)(ii) for discontinued Novartis Patents, the Parties will [*].

(ii) If [*] does not intend to file for patent protection or does not wish to continue Supporting a Novartis Patent, (a "discontinued Novartis Patent") then it shall give at least [*] advance notice, and in no event less than a reasonable period of time for the other Party to act in its stead.

{A) In such case, the other Party may elect at its sole discretion to continue Supporting the discontinued Novartis Patent [*].

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(B) Discontinuance may be elected on a country-by-country basis or for a patent application or patent series in total.

(b) Co-operation. [*] will consult with the other Party and will keep the other Party continuously informed of all matters relating to Support of the Novartis Patents.

(i) [*] shall provide the other Party with a copy of any Novartis Patents relating to the Compound or Product, prior to filing the first of such Patents in any jurisdiction and copies of all material correspondence with the relevant patent office pertaining to the Novartis Patents and relating to the Compound or Product.

(ii) In no event shall a Party relinquish control of the prosecution of Novartis Patents to a Third Party.

6.2 Infringement Claims by Third Parties.

(a) Notice. If the manufacture, use or sale of Product under the Novartis Patents results in a claim or a threatened claim by a Third Party against a Party hereto for patent infringement or for inducing or contributing to patent infringement ("Infringement Claim"), the Party first having notice of an Infringement Claim shall promptly notify the other in writing. The notice shall set forth the facts of the Infringement Claim in reasonable detail.

(b) Third Party Licenses. In the event that exploitation under the Novartis Patents in connection with manufacture, use or sale of Compound or Product in a country would infringe a Third Party Patent and a license to such Third Party Patent is available and [*] seeks such a license, the Parties agree that [*].

(c) Litigation. In the event of the institution of any suit by a Third Party against Vanda as a result of Vanda's manufacture, use or sale of Compound or Product, Vanda shall have the right but not the obligation to defend such suit [*]. Novartis shall cooperate and assist Vanda in any such litigation [*].

6.3 Infringement Claims Against Third Parties.

(a) Cooperation. Novartis and Vanda each agree to take reasonable actions to protect Novartis Patents from infringement, subject to the terms of this Section 6.3. If one Party brings any such action or proceeding, the second Party may be joined as a Party plaintiff if necessary for the action or proceeding to proceed and, in case of joining, the second Party agrees to give the first Party reasonable assistance and authority to file and to prosecute such suit.

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(b) Notice. If any Novartis Patents are infringed by a Third Party, the Party to this Agreement first having knowledge of such infringement, or knowledge of a reasonable probability of such infringement, shall promptly notify the other in writing. The notice shall set forth the facts of such infringement in reasonable detail.

(c) Institution of Proceedings. [*] shall have the primary right, but not the obligation, to institute, prosecute, and control with its own counsel [*] any action or proceeding with respect to infringement of the claims of such Novartis Patents and the other Party shall have the right, but not the obligation at its own expense, to be represented in such action by its own counsel.

(d) Failure to Institute Proceedings. If [*] fails to institute, prosecute, and control such action or prosecution and fails to do so within a period of [*] after receiving notice of the infringement, [*] shall have the right but not the obligation to bring and control any such action by counsel of its own choice, and [*] shall have the right [*], to be represented in any such action by counsel of its own choice.

(e) Division of Damages Award. Each Party shall[*]. Any excess amount awarded in damages shall [*].

(f) Settlement. The Parties shall keep each other informed of the status of and of their respective activities regarding any litigation or settlement thereof concerning Product; provided, however, that no settlement or consent judgment or other voluntary final disposition of a suit under this Section [*].

6.4 Notice of Certification. Novartis and Vanda each shall immediately give notice to the other of any certification filed under the "U.S. Drug Price Competition and Patent Term Restoration Act of 1984" (or its foreign equivalent) claiming that a Novartis Patent is invalid or that infringement will not arise from the manufacture, use or sale of any Product by a Third Party ("Hatch-Waxman Suit Notice").

(a) Within [*] after receipt of notice of such certification [*] shall give written notice to [*] of its decision as to whether to bring a suit [*] within a [*] period from the date of such certification. Should [*] inform [*] that it is not to bring a suit, then [*] shall be free to immediately bring such a suit in its name. If [*] brings suit, at [*] written request [*] agrees to be named as a party to such suit. If [*] brings such a suit, at [*] written request [*] agrees to be named as a party to such suit.

(b) [*] may then, but is not required to, bring suit against the party that filed the certification.

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(c) Any suit by [*] or [*] shall either be in the name of [*] or in the name of [*], or jointly in the name of [*] and [*], as may be required by law.

(d) For this purpose, the Party not bringing suit shall execute such legal papers necessary for the prosecution of such suit as may be reasonably requested by the Party bringing suit.

6.5 Patent Term Extensions. The Parties shall cooperate in good faith with each other in gaining patent term extensions wherever applicable to Novartis Patents covering Compound or Product.

(a) Vanda and Novartis shall jointly determine which Novartis Patents shall be extended.

(b) All filings for such extension shall be made by the Party responsible for prosecution and maintenance of the Novartis Patent, provided, however, that in the event that the Party who is responsible for prosecution and maintenance of the Novartis Patent elects not to file for an extension, such Party shall (i) inform the other Party of its intention not to file and (ii) grant the other Party the right to file for such extension.

6.6 Trademarks. No trade mark shall be included in the licences granted to Vanda under this Agreement. The parties agree to negotiate the terms of a further agreement governing trade marks related to the Compound or Product.

## ARTICLE 7
## REPRESENTATIONS AND WARRANTIES

7.1 Novartis AG and Novartis Representations and Warranties. Each of Novartis and Novartis AG hereby represents and warrants to Vanda as of the Effective Date that:

(a) This Agreement has been duly executed and delivered by it and constitutes the valid and binding obligation of it, enforceable against it in accordance with its terms except as enforceability may be limited by bankruptcy, fraudulent conveyance, insolvency, reorganization, moratorium and other laws relating to or affecting creditors' rights generally and by general equitable principles. The execution, delivery and performance of this Agreement have been duly authorized by all necessary action on the part of it, its officers and directors;

(b) to the best of Novartis' and Novartis AG's knowledge, the Novartis Patents and Novartis Know-How exist and neither Novartis nor Novartis AG have information that would render any Patent invalid or unenforceable, except as disclosed to Vanda or available to Vanda in public information; notwithstanding anything to the contrary in this Agreement, in no event shall Novartis or Novartis AG be deemed to have guaranteed the validity of the Patents.

(c) it has not previously assigned, transferred, conveyed or otherwise encumbered its right, title and interest in Novartis Patents;

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(d) to the best of Novartis AG's knowledge, (i) it is the sole and exclusive owner of the Novartis Patents, (ii) all of which are free and clear of any liens, charges and encumbrances, and (iii) no other person, corporate or other party entity, or governmental entity or subdivision thereof, has or shall have any claim of ownership with respect to the Novartis Patents, whatsoever;

(e) So far as it is aware, the execution, delivery and performance of this Agreement does not conflict with any agreement, instrument or understanding, oral or written, to which it is a Party or by which it may be bound, and, to the best of its knowledge, does not violate any material law or regulation of any court, governmental body or administrative or other agency having authority over it that would be inconsistent with the obligations under this Agreement;

(f) It is not subject to any order, decree or injunction by a court of competent jurisdiction which prevents or materially delays the consummation of the transactions contemplated by this Agreement.

NOVARTIS AND NOVARTIS AG MAKE NO REPRESENTATION OR WARRANTY AND SPECIFICALLY DISCLAIMS ANY GUARANTEE THAT THE DEVELOPMENT OF COMPOUND OR PRODUCTS WILL BE SUCCESSFUL, IN WHOLE OR IN PART, OR THAT NOVARTIS PATENTS AND NOVARTIS KNOW- HOW WILL BE SUITABLE FOR COMMERCIALIZATION OR THAT THE COMPOUND AND/OR PRODUCTS WILL BE SUITABLE FOR USE WITH ANY ADDITIONAL PATENTED TECHNOLOGIES LICENSED FROM A THIRD PARTY. NOVARTIS AND NOVARTIS AG EXPRESSLY DISCLAIM ANY WARRANTIES OR CONDITIONS, EXPRESS, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO NOVARTIS PATENTS AND NOVARTIS KNOW-HOW, INCLUDING WITHOUT LIMITATION, ANY WARRANTY OR MERCHANTABILITY OF FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT.

7.2 Vanda Representation And Warranty. Vanda hereby represents and warrants to each of Novartis and Novartis AG as of the Effective Date that:

(a) The execution, delivery and performance of this Agreement by Vanda does not conflict with any agreement, instrument or understanding, oral or written, to which it is a Party or by which it may be bound, and, to the best of its Knowledge, does not violate my material law or regulation of any court, governmental body or administrative or other agency having authority over it;

(b) Vanda is not currently a party to, and during the term of this Agreement will not enter into, any agreements, oral or written, that are inconsistent with its obligations under this Agreement;

(c) Vanda is duly organized and validly existing under the laws of the country of its incorporation and has full legal power and authority to enter into this Agreement; and

(d) Vanda is not subject to any order, decree or injunction by a court of competent jurisdiction which prevents or materially delays the consummation of the transactions contemplated by this Agreement.

7.3 Disclaimer of Warranties. THE LIMITED WARRANTIES CONTAINED IN THIS ARTICLE ARE THE SOLE WARRANTIES GIVEN BY THE PARTIES AND ARE MADE EXPRESSLY IN LIEU OF AND EXCLUDE ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, INFRINGEMENT OR OTHERWISE, AND ALL OTHER EXPRESS OR IMPLIED REPRESENTATIONS AND WARRANTIES PROVIDED BY COMMON LAW, STATUTE OR OTHERWISE ARE HEREBY DISCLAIMED BY EACH PARTY.

## ARTICLE 8
## CONFIDENTIALITY

8.1 Confidentiality. During the term of this Agreement, and for a period of [*] thereafter, Novartis and Novartis AG will maintain in confidence all information disclosed by Vanda and Vanda will maintain in confidence all information disclosed by Novartis and Novartis AG, including for the avoidance of doubt, Novartis Know-how ("Confidential Information"). With respect to Novartis and Novartis AG, Vanda shall not use, disclose or grant use of such Confidential Information except as required under this Agreement. With respect to Vanda, Novartis and Novartis AG shall not use, disclose or grant use of such Confidential Information except as required under this Agreement, each Party shall use at least the same standard of care as it uses to protect its own Confidential Information to ensure that its and its Affiliates' employees, agents, consultants, and clinical investigators only make use of Confidential Information for the purpose of this Agreement and do not disclose any Confidential Information without the express prior Written consent of the other Party, which consent shall not be unreasonably withheld, or make any unauthorized use of such Confidential Information. Each Party shall promptly notify the other upon discovery of any unauthorized use or disclosure of Confidential Information. Confidential Information shall not include any information which and to the extent:

(a) was already known to the receiving Party, other than under an obligation of confidentiality, at the time of disclosure by the other Party;

(b) was generally available to the public or otherwise part of the public domain at the time of its disclosure to the other Party;

(c) becomes generally available to the public or otherwise part of the public domain after its disclosure and other than through any act or omission of the receiving Party in breach of this Agreement;

(d) was disclosed to the receiving Party, other than under an obligation of confidentiality, by a Third Party who had no obligation to the other Party not to disclose such information; or

(e) was independently developed by the receiving Party without reference to the disclosure by the other Party.

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8.2 Terms of Agreement. The Parties agree that the material financial terms of the Agreement shall be considered the Confidential Information of each Party.

8.3 Permitted Disclosure. Each Party may disclose the Confidential Information to the extent such disclosure is reasonably necessary in filing or prosecuting patent applications, prosecuting or defending litigation, or complying with any applicable statute or governmental regulation provided such Party has given the disclosing Party prompt written notice allowing it to limit such disclosure. In addition, each Party may disclose Confidential Information to its Affiliates and to its Sublicensees; provided, however, in connection with any such disclosure the disclosing Party shall secure confidential treatment of such Confidential Information.

8.4 Employee Obligations. The Parties shall undertake to ensure that all their employees who have access to Confidential Information of the other Party are under obligations of confidentiality fully consistent with those provided in this Article.

8.5 Publication. As between Novartis and Novartis AG on the one hand, and Vanda on the other, no Party may publish confidential or proprietary information of the other Party, without the consent of the other Party. The reviewing Party shall have [*] from receipt of the proposed oral disclosure or written publication to provide comments and/or proposed changes to the disclosing Party. The review period may be extended for [*] to permit the reviewing Party to file one or more patent applications as it deems appropriate. This Section 8.5 shall be inapplicable to the publication of information presented in substantially the same form in which was previously published or disclosed to the public, and at any other disclosures which, on the advice of counsel, are required by law to be disclosed.

## ARTICLE 9
## TERM AND TERMINATION

9.1 TERM.

(a) Term. Unless earlier terminated as provided herein, the term of this Agreement shall commence as of the Effective Date and shall remain in full force and effect until the end of the last to expire milestone or royalty payment obligation of a Party under this Agreement (the "Term").

(b) Accrued Obligations. Except where explicitly provided elsewhere herein, termination of this Agreement for any reason, or expiration of this Agreement, will not affect: (i) obligations, including the payment of any royalties or other sums which have accrued as of the date of termination or expiration, and (ii) rights and obligations which, from the context thereof, are intended to survive termination or expiration of this Agreement.

9.2 Termination for Insolvency, Either Party may terminate this Agreement immediately upon delivery of written notice to the other Party (a) upon the institution by or against the other Party of insolvency, receivership or bankruptcy proceedings or any other proceedings for the settlement of the other Party's debts; provided, however with respect to involuntary proceedings, that such proceedings are not dismissed within one hundred and twenty (120) days; (b) upon the other Party's making an assignment for the benefit of

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creditors; or (c) upon the other Party's dissolution or ceasing to do business. In the event that such insolvency, receivership or bankruptcy proceedings or any other proceedings for the settlement of a Party's debts are instituted, that Party shall immediately notify the other Party of such proceedings.

9.3 Termination for Lack of Diligence. If Vanda [*], as determined by Vanda with the agreement of Novartis or materially breaches the terms of this Agreement, then Novartis may terminate this Agreement upon [*] prior written notice to Vanda. Such prior written notice shall specify that it is a notice of termination under this Section 9.3. Within [*] following Vanda's receipt of such prior written notice (the "Response Period"), Vanda shall [*]. At the request of either Vanda or Novartis, representatives of Novartis and Vanda shall meet to [*]. For avoidance of doubt, Vanda may remedy any remediable breach of its obligation under this Section 9.3 during the Response Period. Should Vanda, during the Response Period, fail to (i) remedy such remediable breach, (ii) respond to Novartis' written notice of termination under this Section, or (iii) provide to Novartis any written response regarding compliance or remedy of breach under this Section, then Novartis may terminate this Agreement pursuant to the termination provisions set forth in Section 9.4.

9.4 Material Breach. Either Party may terminate this Agreement upon [*] prior written notice to the other Party upon the material breach by the other Party of any of its obligations under this Agreement; provided, however, that such termination shall become effective only if the other Party shall fail to remedy or cure the breach within [*] period. If either Party is in breach of any material obligation hereunder and, in the case of a breach incapable of remedy, the Party not in breach of the material obligation may forthwith terminate this Agreement by notice without prejudice to the accrued rights of either Party.

9.5 Termination by Vanda. Vanda's obligations to develop and commercialise under this Agreement may be terminated by it at any time upon [*] prior written notice to Novartis in the event that [*], and Vanda agrees to give Novartis prompt notice in writing and in person thereof of such issue.

9.6 Effect Of Termination.

(a) Effect On License. Upon the expiration or earlier termination of this Agreement, the rights licensed under this Agreement shall be treated as follows:

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(i) Upon the expiration of the Term, Vanda shall have a fully paid-up, perpetual, irrevocable, royalty-fee, transferable, worldwide, non-exclusive right and license under the Novartis Patents and Novartis Know-How existing as of the date of such expiration to make, have made, use, offer to sell, and sell Product in the Territory.

(ii) Upon termination by Novartis pursuant to Section 9.2, 9.3, 9.4 or by Vanda pursuant to Section 9.5 all rights to Product granted by Novartis to Vanda shall revert to Novartis. Upon such termination, Vanda shall grant to Novartis a non-exclusive, world-wide, transferable, irrevocable, perpetual license, with the right to sublicense, under the Vanda Technology to make, use, offer to sell, sell and import Products solely in the country or countries in which Vanda's licenses under this Agreement were so terminated. If the termination was not due to Section 9.4 and if the Product is ultimately commercialized, Novartis would pay Vanda [*]% of Net Sales until the later of either the last Novartis Patent to expire (including extensions thereof) with a Valid Claim related to the Compound or Product or a method of use thereof, or five (5) years from the date of First Commercial Sale.

(b) Ongoing Obligations.

(i) Upon expiration or termination of this Agreement for any reason, each Party shall immediately return to the other Party or destroy any Confidential Information disclosed by the other Party, except for one copy which may be retained in its confidential files for archive purposes only.

(ii) Upon termination of this Agreement by Novartis pursuant to Sections 9.2, 9.3, 9.4 or by Vanda pursuant to Section 9.5, Vanda shall assign and deliver to Novartis all data and information (including registration dossiers) obtained for or in pursuing Regulatory Approvals, and all Regulatory Approvals (e.g., to Novartis; designee in the Territory as permitted under the applicable law) for Product in the Territory received as of such termination date.

9.7 Inventory. Notwithstanding the foregoing, upon early termination of this Agreement pursuant to Sections 9.2, 9.3, 9.4 or 9.5, Vanda shall have the right to sell all remaining Product in its inventory [*] after the date of termination, subject to the payment to Novartis of the amounts specified in Article 5. Thereafter, Vanda agrees [*].

9.8 Royalty and Payment Obligations. Termination of this Agreement by either Party for any reason will not release the other Party from any obligation to pay royalties or make any other payments to the Party which were accrued prior to and including the effective date of termination or expiration (including for Net Sales and milestones payable prior to the date of termination). Termination of this Agreement by either Party for any reason will not release Vanda from any obligation to pay royalties to Novartis on sales arising from Section 9.7. All payments due to Novartis but not yet paid by Vanda as of the date of termination shall become immediately due to Novartis.

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## ARTICLE 10
## INDEMNIFICATION

10.1 Indemnification by Novartis. Novartis will indemnify and hold Vanda and its Affiliates, and their employees, officers and directors harmless against any loss, damages, action, suit, claim, demand, liability, expense, bodily injury, death or property damage (a "Loss"), that may be brought, instituted or arise against or be incurred by such persons to the extent such Loss is based on or arises out of [*]; provided however, that the foregoing indemnification shall not apply to any Loss to the extent such Loss is caused by the grossly negligent or willful misconduct of Vanda, its Affiliates or Sublicensees.

10.2 Indemnification by Vanda. Vanda will indemnify and hold Novartis and Novartis AG, and its Affiliates, and their employees, officers and directors harmless against any Loss that may be brought, instituted or arise against or be incurred by such persons to the extent such Loss is based on or arises out of:

(a) [*]; or

(b) [*];

(c) provided that the foregoing indemnification shall not apply to any Loss to the extent such Loss is caused by the grossly negligent or willful misconduct of Novartis, Novartis AG or its Affiliates.

10.3 Claims Procedures. Each Party entitled to be indemnified by the other Party (an "Indemnified Party") pursuant to Section 10.1 or 10.2 hereof shall give notice to the other Party (an "Indemnifying Party") promptly after such Indemnified Party has actual knowledge of any threatened or asserted claim as to which indemnity may be sought, and shall permit the Indemnifying Party to assume the defense of any such claim or any litigation resulting therefrom; provided:

(a) That counsel for the Indemnifying Party, who shall conduct the defense of such claim or any litigation resulting therefrom, shall [*] by the Indemnified Party [*] and the Indemnified Party may participate in such defense [*].

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(b) The failure of any Indemnified Party to give notice as provided herein shall not relieve the Indemnifying Party of its obligations under this Agreement to the extent that the failure to give notice did not result in harm to the Indemnifying Party.

(c) No Indemnifying Party, in the defense of any such claim or litigation, shall, except with the approval of each Indemnified Party which approval shall not be unreasonably withheld, consent to entry of any judgment or enter into any settlement which [*].

(d) Each Indemnified Party shall furnish such information regarding itself or the claim in question as an Indemnifying Party may reasonably request in writing and shall be reasonably required in connection with the defense of such claim and litigation resulting therefrom.

10.4 Indemnification Amounts. An Indemnifying Party shall not have liability with respect to any breach of any of this Agreement: (a) for any individual item where the Loss relating thereto is [*], and (b) in respect of each individual item where the Loss relating thereto is equal to or greater [*], unless and until [*] and then the Indemnifying Party will be liable for the entire amount of the Losses described in this clause. Each Party shall take and shall cause its Affiliates to take all reasonable steps to [*]

10.5 Compliance. The Parties shall comply fully with all applicable laws and regulations in connection with their respective activities under this Agreement.

## ARTICLE 11
## MISCELLANEOUS PROVISIONS

11.1 Dispute Resolution. In the event of any controversy or claim arising out of relating to or in connection with any provision of this Agreement, or the rights or obligations hereunder, the Parties shall try to settle their differences amicably between themselves. As between Novartis and Novartis AG on the one hand, and Vanda on the other, each Party may initiate such informal dispute resolution by sending written notice of the dispute to the other Party, and within [*] after such notice appropriate representatives of the Parties shall meet for attempted resolutions by good faith negotiations. If such representatives are unable to resolve such disputed matters, it shall be referred to [*], for discussion and resolution.

11.2 Governing Law. This Agreement shall be construed and the respective rights of the Parties determined according to the substantive laws of the State of New York notwithstanding the provisions governing conflict of laws under such New York law to the contrary, except matters of intellectual property law which shall be determined in accordance with the intellectual property laws relevant to the intellectual property in question.

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11.3 Jurisdiction. Any controversy or claim arising out of or in connection with this Agreement, which cannot be settled within [*] of the notice according to Section 11.1, shall be under the exclusive jurisdiction of the courts in New York, NY, USA.

11.4 Waiver. The failure on the part of Vanda or Novartis to exercise or enforce any rights conferred upon it hereunder shall not be deemed to be a waiver of my such rights nor operate to bar the exercise or enforcement thereof at any time or times thereafter. The observance of any term of this Agreement may be waived (either generally or in a particular instance and either retroactively or prospectively) by the Party entitled to enforce such term, but any such waiver shall be effective only if in writing signed by the Party against whom such waiver is to be asserted.

11.5 Force Majeure. No Party shall be held liable or responsible to the other Party nor be deemed to have defaulted under or breached this Agreement for failure or delay in fulfilling or performing any term of this Agreement, other than an obligation to make a payment, when such failure or delay is caused by or results from fire, floods, embargoes, government regulations, prohibitions or interventions, war, acts of war (whether war be declared or not), insurrections, riots, civil commotions, strikes, lockouts, acts of God, or any other cause beyond the reasonable control of the affected Party.

11.6 Severability. It is the intention of the Parties to comply with all applicable laws domestic or foreign in connection with the performance of its obligations hereunder. In the event that any provision of this Agreement, or any part hereof, is found invalid or unenforceable, the remainder of this Agreement will be binding on the Parties hereto, and will be construed as if the invalid or unenforceable provision or part thereof had been deleted, and the Agreement shall be deemed modified to the extent necessary to render the surviving provisions enforceable to the fullest extent permitted by law.

11.7 Government Acts. In the event that any act, regulation, directive, or law of a government, including its departments, agencies or courts, should make impossible or prohibit, restrain, modify or limit any material act or obligation of Vanda or Novartis or Novartis AG under this Agreement, the Party, if any, not so affected shall have the right, at its option, to suspend or terminate this Agreement as to such country, if good faith negotiations between the Parties to make such modifications to this Agreement as may be necessary to fairly address the impact thereof, after a reasonable period of time are not successful in producing mutually acceptable modifications to this Agreement.

11.8 Assignment. This Agreement may not be assigned or otherwise transferred by either Party without the prior written consent of the other Party; provided, however, that either Party may assign this Agreement, without the consent of the other Party, (i) to any of its Affiliates, if the assigning Party guarantees the full performance of its Affiliates' obligations hereunder, or (ii) in connection with the transfer or sale of all or substantially all of its assets or business or in the event of its merger or consolidation with another company. In all cases the assigning Party shall provide the other Party with prompt notice of any such assignment. Any purported assignment in contravention of this Section shall, at the option of the non-

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assigning Party, be null and void and of no effect. No assignment shall release either Party from responsibility for the performance of any accrued obligation of such Party hereunder.

11.9 Counterparts. This Agreement may be executed in duplicate, both of which shall be deemed to be originals, and both of which shall constitute one and the same Agreement.

11.10 No Agency. Nothing herein contained shall be deemed to create an agency, joint venture, amalgamation, partnership or similar relationship between Novartis AG and Novartis on the one hand, and Vanda on the other. Notwithstanding any of the provisions of this Agreement, as between Novartis and Novartis AG on the one hand, and Vanda on the other, no Party shall at any time enter into, incur, or hold itself out to third Parties as having authority to enter into or incur, on behalf of the other Party, any commitment, expense, or liability whatsoever, and all contracts, expenses and liabilities undertaken or incurred by one Party in connection with or relating to the development, manufacture or sale of Compounds or Products shall be undertaken, incurred or paid exclusively by that Party, and not as an agent or representative of the other Party.

11.11 Notice. As between Novartis and Novartis AG on the one hand, and Vanda on the other, all communications between the Parties with respect to any of the provisions of this Agreement will be sent to the addresses set out below, or to other addresses as designated by one Party to the other by notice pursuant hereto, by internationally recognized courier or by prepaid certified, air mail (which shall be deemed received by the other Party on the seventh Business Day following deposit in the mails), or by facsimile transmission or other electronic means of communication (which shall be deemed received when transmitted), with confirmation by letter given by the close of business on or before the next following Business Day:

If to Novartis AG, at:
Novartis AG
[*]
Basel, Switzerland
Attn: [*]

If to Novartis, at:
Novartis Pharma AG
[*]
Basel, Switzerland
Attn: [*]

If to Vanda at:
Vanda Pharmaceuticals Inc.
[*]
Princeton, NJ 08542
Attn: [*]

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11.12 Headings. The paragraph headings are for convenience only and will not be deemed to affect in any way the language of the provisions to which they refer.

11.13 Entire Agreement. This Agreement contains the entire understanding of the Parties relating to the matters referred to herein, and may only be amended by a written document, duly executed on behalf of the respective Parties.

***[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK - SIGNATURE PAGE FOLLOWS]***

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their duly authorized representatives as of the Effective Date.

VANDA PHARMACEUTICALS, INC.

By: /s/ Mihael Polymeropoulos
---
Mihael Polymeropoulos
Chief Executive Officer

NOVARTIS PHARMA AG

By: /s/ Herve Girsault
---
June 4, 2004
Name: Herve Girsault
Title: Head, Global Partnering
Business Development & Licensing

By: /s/ Tom Chakraborti
---
Name: Tom Chakraborti
Title: Senior Legal Counsel
22nd June, 2004

NOVARTIS AG

By: /s/ Jorg Walther
---
Name: Jorg Walther
Title: Authorized Signatory

By: /s/ Clive S. Morris
---
Name: Clive S. Morris
Title: Authorised Signatory
23-06-04

NDD094 corresponds to [*]. It has the molecular formula [*] and the following structure:

[*]

- ----------
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SCHEDULE 3.1

TERMS AND CONDITIONS FOR THE SALE OF COMPOUND FORM NOVARTIS TO VANDA

Available Compound Substance and Lot Number:

[*]

Total available Compound substance for technical use only

Price per kg of Compound substance:

[*]

Delivery Terms:

EX WORKS (as such term is defined in INCOTERMS 2000 of the International Chamber of Commerce in Paris: delivery to Vanda shall occur when the Compound and Product is placed at Vanda's disposal at Novartis' premises)

NOVARTIS AND NOVARTIS AG MAKE NO REPRESENTATION OR WARRANTY THAT ANY QUANTITIES OF COMPOUND PROVIDED TO VANDA UNDER THIS AGREEMENT WILL [*].

[*] CERTAIN INFORMATION ON THIS PAGE HAS BEEN OMITTED AND FILED SEPARATELY WITH THE COMMISSION. CONFIDENTIAL TREATMENT HAS BEEN REQUESTED WITH RESPECT TO THE OMITTED PORTIONS.

ANNEX 1 - DEVELOPMENT PLAN AND BUDGET

A. DEVELOPMENT TIMELINES

[*]

B CLINICAL TRIALS TO BE PERFORMED UNDER DEVELOPMENT PLAN BY VANDA:

B1 [*]

Primary objectives:

(1) [*]
(2) [*]

B2 [*]

Primary objectives:

(1) [*]
(2) [*]

- ----------
[*] CERTAIN INFORMATION ON THIS PAGE HAS BEEN OMITTED AND FILED SEPARATELY WITH THE COMMISSION. CONFIDENTIAL TREATMENT HAS BEEN REQUESTED WITH RESPECT TO THE OMITTED PORTIONS.

B3 [*]

Primary objectives:

(1) [*]
(2) [*]
(3) [*]
(4) [*]

B4 [*]

Primary Objectives:

(1) [*]
(2) [*]
(3) [*]

- ----------
[*] CERTAIN INFORMATION ON THIS PAGE HAS BEEN OMITTED AND FILED SEPARATELY WITH THE COMMISSION. CONFIDENTIAL TREATMENT HAS BEEN REQUESTED WITH RESPECT TO THE OMITTED PORTIONS.

C. DEVELOPMENT COST

[*]

VANDA PHARMACEUTICALS, INC.
NDD094
[*]
- ----------
[*] CERTAIN INFORMATION ON THIS PAGE HAS BEEN OMITTED AND FILED SEPARATELY WITH THE COMMISSION. CONFIDENTIAL TREATMENT HAS BEEN REQUESTED WITH RESPECT TO THE OMITTED PORTIONS.

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PATENT SCHEDULE [*]

[*]

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[*] CERTAIN INFORMATION ON THIS PAGE HAS BEEN OMITTED AND FILED SEPARATELY WITH THE COMMISSION. CONFIDENTIAL TREATMENT HAS BEEN REQUESTED WITH RESPECT TO THE OMITTED PORTIONS.

[*]

ANNEX 4
Novartis POLICY STATEMENT

VANDA agrees to abide by the following policy statement, which is binding on all parties under contract with Novartis, and is in support of the protection of internationally proclaimed human rights, ethical and legal behaviour, fair, courteous and respectful treatment of others, and professionalism and good business practice.

Gifts, favours, kickbacks, entertainment or other offering of financial advantage to an official of a government or a government-controlled entity for the purpose of obtaining business or other services, as set out in the OECD Convention on Combating Bribery of Foreign Public Officials are not allowed. Gifts, favours or entertainment to non-governmental officials may be provided to others only if they meet all of the following criteria:

(a) they are consistent with government regulations and customary business practices;

(b) they are not excessive in value, and cannot be construed as a bribe or a pay-off;

(c) they are not in contravention of applicable law or ethical standards; and

(d) they will not embarrass Novartis, VANDA, or the recipient if publicly disclosed.

VANDA shall respect the principles and rules of fair competition and shall not violate applicable antitrust laws.

VANDA hereby agrees that in its dealings on behalf of Novartis, it will take no action, directly or indirectly, that is inconsistent with the language or spirit of this policy statement. VANDA further acknowledges and agrees that any such action will serve as grounds for immediate termination of this Agreement by Novartis.

Exhibit 23.2

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the use in this Registration Statement on Form S-1 of our reports dated February 15, 2006 relating to the financial statements of Vanda Pharmaceuticals Inc., which appear in such Registration Statement. We also consent to the references to us under the headings "Experts" in such Registration Statement.

/s/ PricewaterhouseCoopers LLP

McLean, Virginia
February 15, 2006

Exhibit 23.3

L.E.K. CONSULTING LLC
28 STATE STREET
16TH FLOOR
BOSTON, MA 02109

February 14, 2006

LEK Consulting, LLC ("LEK") hereby consents to the use of LEK's name, and the statements attributed to LEK, in the Registration Statement of Vanda Pharmaceuticals Inc. on Form S-1.

LEK CONSULTING, LLC

By: /s/ Michael Clabault
---

Its: C.F.O.

GUNDERSON DETTMER STOUGH
VILLENEUVE FRANKLIN & HACHIGIAN, LLP
610 LINCOLN STREET
WALTHAM, MASSACHUSETTS 94025
TELEPHONE: (781) 890-8800 FACSIMILE: (781) 622-1622

February 16, 2006

VIA EDGAR AND OVERNIGHT COURIER

Securities and Exchange Commission
Division of Corporation Finance
Washington, D.C. 20549
Attention: Jeffrey Riedler and Mary Fraser
Mail Stop 6010

Re: Vanda Pharmaceuticals Inc.
Amendment No. 1 to Registration Statement on Form S-1
Filed February 16, 2006

Dear Mr. Riedler and Ms. Fraser:

Vanda Pharmaceuticals Inc. (the "Company") has electronically transmitted, via EDGAR, Amendment No. 1 ("Amendment No. 1") to its Registration Statement on Form S-1 (the "Registration Statement"), together with certain exhibits thereto. Manually executed signature pages and consents have been executed prior to the time of this electronic filing and will be retained by the Company for five (5) years. We have also enclosed with the couriered delivery of this letter (i) three unmarked hard copies of Amendment No. 1 and (ii) three hard copies of Amendment No. 1 which are marked to show changes to the Registration Statement filed on December 29, 2005.

On behalf of the Company, this letter responds to the comments set forth in the letter to the Company dated January 27, 2006 from the staff of the Securities and Exchange Commission (the "Staff"). For your convenience, we have repeated and numbered the comments from the January 27, 2006 letter in italicized print, and the Company's responses are provided below each comment.

Comments applicable to the entire filing

1. We note that your filing contains numerous omissions throughout the prospectus which relate to the offering price range or the number of shares you will sell. These omissions include but are not limited to:

- o Summary Financial Data
- o Use Of Proceeds
- o The Option Grants Table
- o Shares Eligible For Future Sale

- o Capitalization
- o Dilution
- o The Principal Stockholders Table
- o Description of Capital Stock

Rule 430A requires you to include this information in your filing based upon an estimate of the offering price within a bona fide range you disclose on the cover page and based upon an estimate of the number of shares you will sell. We consider a bona fide range to be $2 if the price is under $20 and 10% if it is above $20. You should include the required information in an amendment prior to circulating a "red herring" prospectus.

RESPONSE TO COMMENT 1:

The offering price range, and as a result all related pricing information, including the number of shares to be sold, have yet to be determined by the Company and the underwriters. The Company will file another pre-effective amendment which will include such information as soon as such a determination has been made.

2. Provide us with copies of all the graphic, photographic or artistic materials you intend to include in the prospectus prior to its printing and use. Please note that we may have comments. Please also note that all textual information in the graphic material should be brief and comply with the plain English guidelines regarding jargon and technical language.

RESPONSE TO COMMENT 2:

The Company will not be using any graphic, photographic or artistic materials in the prospectus.

3. Although your exhibit index indicates that you are seeking confidential treatment for a number of exhibits, you do not appear to have filed an application for confidential treatment. Please note that Rule 406 of Regulation C specifies that the application is to be filed at the same time the registration statement is filed. Please file the application as soon as possible. We will not be in a position to accelerate effectiveness of your registration statement until all issues relating to your confidential treatment request have been resolved.

RESPONSE TO COMMENT 3:

Exhibits 10.2, 10.3 and 10.4 have been filed with Amendment No. 1. Confidential treatment has been requested with respect to these Exhibits in a separate application filed contemporaneously with this letter (the "CTR"). Exhibits 10.5 and 10.6 have been omitted from the Registration Statement in Amendment No. 1 because Exhibit 10.5 was entered into in the ordinary course of business within the meaning of Item 601(b)(10) of Regulation S-K and Exhibit 10.6 has expired and is not material to the Company's business.

The Company notes the Staff's comment that the resolution of all confidentiality issues is a condition to acceleration of the effectiveness of the Registration Statement.

4. In a number of places in your document you have used technical jargon that is not likely to be understood by your readers. Technical jargon should not appear in the forefront of the prospectus. Please refer to Rule 421 of Regulation C. In the remainder of the prospectus you should minimize the use of jargon. If you cannot convey information without using jargon, please explain what the jargon means at the first place the terms appear. Here are some examples of technical jargon that needs to be replaced:

   o Small molecule product candidates

   o Differentiated new therapy

   o Atypical antipsychotic

   o Pivotal Phase III trial

   o Melatonin agonist

   o Injectable depot formulation

   To the extent that these terms cannot be replaced by suitable alternatives, please revise to explain the meaning of these terms the first time each one is used.

   RESPONSE TO COMMENT 4:

Amendment No. 1 contains revisions which respond to the above comment; the Company has omitted or, where omission is not practical, explained the meaning of the above phrases and other similar phrases in the Registration Statement.

5. You have created a number of acronyms for use in this document that are not likely to be familiar to your readers. The use of acronyms is a convenience for the writer, but it forces readers to learn a new vocabulary in order to understand the disclosure in your document. Please delete all of the acronyms except those which can be commonly found in general interest publications. Examples of acronyms that should be deleted include.

   o PG

   o WASO

   o CRSD

   o NCE

   o SNP

   o PANSS

   o BPRS

   o LOCF

   o MMRM

   RESPONSE TO COMMENT 5:

The Company notes the Staff's comment and has revised the Registration Statement to delete the use of acronyms other than those commonly found in general interest publications.

Prospectus Summary
- ------------------

6. In the last paragraph of page 1, the last paragraph of page 2, the first paragraph of page 3 and the fourth paragraph of page 3 you present statistical and market share information related to your proposed products. Please provide us with a copy of the document(s) containing the information you are relying on as support for these statements. Mark the copy of the document to show the location of each piece of information you are relying on. Provide similar factual support for all similar claims made throughout the registration statement. We may have additional comments after reviewing the supporting documents.

RESPONSE TO COMMENT 6:

Enclosed with this letter are binders of the documents on which the Company is relying which relate to statistical and market share information. These documents have been marked to indicate the location of the relevant information. [*]

7. In the third full paragraph of page 2 you refer to "our market research." Please provide us with a copy of the research you are referring to. It should be marked to show the location of the information you are citing. We may have further comment after reviewing the documentation.

RESPONSE TO COMMENT 7:

The enclosed binders mentioned in the response to Comment 6 above also include copies of the market research reports referred to on page 2. [*]

8. We note your statement that you plan to partner with a global pharmaceutical company for the development and commercialization of VEC-162 worldwide. If you have not yet identified a partner, please disclose this information here and in the "Business" section of your document. Also, disclose that Bristol Meyers Squibb has the right to commercialize VEC-162 on its own if you have not entered into a partnering arrangement after the completion of your Phase III program.

RESPONSE TO COMMENT 8:

The Company has included disclosure in Amendment No. 1 to indicate that it has not yet identified a partner for VEC-162. Please see pages 1, 53 and 65.

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[*] A REQUEST FOR CONFIDENTIAL TREATMENT HAS BEEN MADE WITH RESPECT TO CERTAIN OF THE DOCUMENTS AND REPORTS FILED WITH THE COMMISSION PURSUANT TO 17 CFR 200.83.

The Company notes the Staff's comment regarding Bristol-Myers Squibb's option but respectfully submits that the Company does not believe it is necessary to include a statement regarding BMS' option in the forefront of the prospectus summary, given that a similar statement has been included in the summary discussion of risks on page 3 in response to Comment #9 below. The Company also notes that (i) the Company can control to a large extent whether to enter into a partnering arrangement, thus terminating BMS' option and (ii) the Company has some leverage in determining when BMS has the right to exercise this option, by virtue of clause (2) of Section 3.1.2 of the VEC-162 license agreement (Exhibit 10.3 to the Registration Statement, redacted pursuant to the CTR).

9. Similarly, in the summary discussion of the risks associated with your business, disclose that your agreements with Novatis provides Novartis with the ability to terminate your agreements if you fail to meet development or commercialization milestones and that your agreement with Bristol Meyers Squibb allows Bristol Meyers Squibb to commercialize VEC-162 on its own if you have not entered into a partnership arrangement.

RESPONSE TO COMMENT 9:

The Company notes the Staff's comment and has revised page 4 of the Registration Statement to provide additional disclosure in the summary discussion. Please note that the Company regards certain specific dates and other information relating to the above-noted milestones and option as sensitive commercial and strategic information. Confidential treatment has been requested for this information in the CTR.

10. Supplementally explain why you believe your PG expertise is unique and how it will provide you with preferential access to compounds discovered by other pharmaceutical companies and how it will allow you to shorten the drug development timeline relative to other traditional approaches.

RESPONSE TO COMMENT 10:

The Company hereby supplementary informs the Staff as follows:

Mihael Polymeropoulos, the Company's Chief Executive Officer, established and led one of the pioneering PG departments in the pharmaceutical industry at Novartis AG. Several key members of Novartis' PG department joined the Company from Novartis, and currently work at the Company. The Company is unaware of any biopharmaceutical or biotechnology company which has substantial PG expertise, other than certain of the largest, established "big pharma" companies. Additionally, as far as the Company is aware, none of the "big pharma" companies is developing its PG expertise in the way that the Company is, by applying it to the identification and development of new uses and other potential points of differentiation for the many "big pharma"-owned compounds that are stalled in their clinical development due to efficacy issues and that may consequently be available for licensing.

The Company is a unique potential licensing and commercialization partner for any "big pharma" compound because (as far as the Company is aware) the Company is the only entity that offers substantial PG expertise and that does not compete directly with "big pharma." Accordingly, and also due to the focused application of the Company's PG expertise and the reputation and contacts of its executive and scientific teams, ["big pharma" companies have] provided preferential access to compounds that have stalled in their clinical development and that are consequently available for licensing.

The Company's strategy of licensing in "big pharma" compounds that have stalled in their clinical development, in lieu of a strategy of identifying and developing new compounds, will shorten the Company's development timeline because the Company intends only to license in compounds which have been proven safe in Phase I clinical studies. The Company will be able to rely on the safety findings of these studies, rather than conducting them in-house, and will be able to proceed immediately to proving efficacy for these compounds in later-phase clinical studies, using its PG expertise to find efficacious uses.

Summary consolidated financial data, page 6

11. Please expand your disclosures in the introductory paragraph to clarify that in addition to the pro forma balance sheet you include pro forma net loss per share data.

RESPONSE TO COMMENT 11:

The Company notes the Staff's comment and has included this expanded disclosure in the Registration Statement. Please see page 6.

Risk Factors, page 8

We face substantial competition which may result in others developing or commercializing products before or more successfully than we do.

12. The information in this risk factor is too generic to be informative to an investor. Please identify the existing products that your proposed products will compete with. Also, since you are aware of other companies engaged in the development of potentially competitive products, identify those proposed products and their manufacturers and indicate, to the extent you are aware, the development stage of the proposed products.

RESPONSE TO COMMENT 12:

In response to the Staff's comment, the Company has revised the Registration Statement to include detailed disclosure regarding competitive compounds in the risk factor cited by the Staff. Please see pages 14 and 15.

Product liability lawsuits could divert our resources, result in substantial liabilities and reduce the commercial potential of our products. -- page 16.

13. We note your statement that your insurance may not fully cover potential liabilities. Please revise to disclose the limitations on your insurance coverage. Similarly, revise "If we use hazardous and biological materials in a way that causes injury or violates applicable law, we may be liable for damages."

RESPONSE TO COMMENT 13:

In response to the Staff's comment, the Company has included information on the Company's coverage limits in the risk factors cited by the Staff. Please see pages 17 and 21.

Our rights to develop and commercialize our product candidates are subject in part to the terms and conditions of licenses or sublicenses granted to us by other pharmaceutical companies... -- page l8.

14. We note that if you fail to meet milestones described in your licensing agreements with Novartis, your rights to develop and commercialize iloperidone and VSF-173 may terminate. Revise to describe the milestones here and in the description of the licensing agreements beginning on page 63.

RESPONSE TO COMMENT 14:

The Company notes the Staff's comment and has included additional descriptions of the above-noted milestones on pages 18 and 19 of Amendment No. 1. Please note that the Company regards certain specific dates and other information relating to these milestones as confidential information. Confidential treatment has been requested for this information in the CTR.

15. In the next to last sentence of the first paragraph you state that your rights to develop and commercialize iloperidone may be impaired if you do not cure breaches by Novartis and Titan of similar obligations contained in these sublicense and license agreements. This suggests that there is an outstanding breach. If so, please describe it in reasonable detail along with the steps you have taken to cure the breach. If there is no breach, please revise the language to eliminate the suggestion that there is one.

RESPONSE TO COMMENT 15:

In response to the Staff's comment, the language cited by the Staff has been revised on page 18 to eliminate the suggestion that we are aware of a current breach by Titan or Novartis.

A substantial number of shares of our common stock could be sold into the public markets shortly after this offering which could depress our stock price. -- page 21

16. Please revise to quantify the number of outstanding shares that will be eligible to be sold into the public markets.

RESPONSE TO COMMENT 16:

The Company notes the Staff's comment and has revised the risk factor as requested. Please see page 22.

Existing stockholders significantly influence us and could delay or prevent an acquisition by a third party -- page 23

17. Please expand the risk factor to discuss the risk of management entrenchment.

RESPONSE TO COMMENT 17:

The Company notes the Staff's comment and has expanded the risk factor as requested. Please see pages 23 and 24.

Completion of this offering may limit our ability to use our net operating loss carryforwards.--page 24

18. Please quantify the disclosure in this risk factor.

RESPONSE TO COMMENT 18:

This risk factor has been omitted from Amendment No. 1. Upon further review, the Company does not believe that the risks regarding net operating loss carryforwards are easily quantifiable or in any way unique to the Company.

Use of Proceeds -- page 26

19. Please refer to Item 504 of Regulation S-K. You need to significantly expand the information included in the second paragraph of the discussion to identify the specific research and potential products that you will use the proceeds for. Disclose the specific amounts that you intend to spend on each of "research," "pre-clinical development" and "clinical trials" and how far along the development spectrum that you anticipate the proceeds will enable you to go. Disclose whether material amounts of additional funding will be necessary to achieve the purposes you have identified. If so, disclose the amounts of other funds that will be necessary and the sources you will obtain them from.

RESPONSE TO COMMENT 19:

The Company notes the Staff's comment and has provided additional disclosure on page 26 to address this comment.

20. You say that the "balance" of the net proceeds will be used for general corporate purposes, including working capital and the acquisition of pharmaceutical products and businesses that are complementary to your own. Please be more specific about what these purposes are and the amount you will use for each purpose. We may have additional comments after reviewing your response.

RESPONSE TO COMMENT 20:

The Company notes the Staff's comment but respectfully submits that it does not have a definitive plan for how the remaining net proceeds will be allocated. Rather, management will have discretion to allocate this remainder for general purposes or for the acquisition or licensing of product candidates or businesses to the extent management believes such acquisitions or licenses would be in the Company's best interests and are capable of being consummated effectively.

Capitalization, page 27

21. It appears that your pro forma capitalization table should include the Series B Preferred Stock issued on December 9, 2005. Please revise your disclosures or disclose, and explain to us, why the Series B Preferred Stock issued on December 9, 2005 is excluded from the pro forma capitalization table. Your pro forma column should give effect to events that have taken place and the pro forma as adjusted column should include events that are contingent on the offering.

RESPONSE TO COMMENT 21:

The Company notes the Staff's comment. All capitalization numbers are now current as of December 31, 2005 and account for the December 9, 2005 issuance of the Company's Series B Preferred Stock. In addition, the Company supplementally informs the Staff that the Company has not issued any securities, other than option grants to employees, since December 31, 2005.

22. Please refer to your tabular disclosures. It appears that the solid lines before and after "Accumulated deficit" should be moved to the "Total capitalization" line item. Please revise or advise us.

RESPONSE TO COMMENT 22:

The Company notes the Staff's comment and has revised the table as requested.

Dilution, page 28

23. It appears that the pro forma net tangible book value amounts should include the Series B Preferred Stock issued on December 9, 2005. Please revise your disclosure or disclose, and explain to us, why the Series B Preferred Stock issuance is excluded from the pro forma amounts.

RESPONSE TO COMMENT 23:

The Company notes the Staff's comment. All pro forma net tangible book value amounts in the Registration Statement are now current as of December 31, 2005 and account for the December 9, 2005 issuance of the Company's Series B Preferred Stock.

Management's discussion and analysis of financial condition and results of operations Overview, page 32

24. We note that while you are unable to estimate the specific timing and future costs of your clinical development program, your Phase III trials for Iloperidone began in November 2005 and you expect them to be completed by early 2007. If these trials are successful, you believe that the related data will support US and European regulatory filings. Please disclose the following information for your research and development activities related to Iloperidone:

    a. The nature, timing and estimated costs of the efforts necessary to complete this project;

    b. The consequences to operations, financial position and liquidity if this project is not completed timely;

    c. The period in which material net cash inflows from this project are expected to commence assuming successful filings with US and European regulators.

Regarding a., disclose the amount or range of estimated costs and timing to complete the phase in process and each future phase. To the extent that information is not estimable, disclose those facts and circumstances indicating the uncertainties that preclude you from making a reasonable estimate. Please revise your contractual obligations and commitment disclosures starting on page 44, as appropriate.

RESPONSE TO COMMENT 24:

The Company notes the Staff's comment and has revised Management's discussion and analysis of financial condition and results of operations in response to this comment. Please see pages 34 and 46.

Critical accounting policies

Revenue recognition, page 48

25. We note that you discuss revenue earned under research and development contracts. It appears that these types of contracts are no longer material since you disclose that Vanda completed its obligations under these types of consulting agreements during the year ended December 31, 2004, and no longer seeks such arrangements. Please clarify why revenue earned under research and development contracts is a critical accounting policy to explain this inconsistency. If you believe this revenue recognition policy is critical, it appears that an output-based approach is the appropriate model to estimate performance under the contract rather than using an input measure, such as cost. If costs incurred compared to total estimated costs over the development period approximates the proportion of the value of the services provided compared to the total estimated value over the development period, please clarify your disclosure. Revise your disclosures in Note 2 to the consolidated financial statements, as appropriate.

RESPONSE TO COMMENT 25:

The Company notes the Staff's comment and has deleted the revenue recognition policy from the Registration Statement.

Business -- page 51

Potential advantages of iloperidone -- page 54

26. In the carryover paragraph at the top of page 55 you reference "market research we conducted with LEK Consulting." Rule 436 of Regulation C indicates that where a report of an expert is summarized in the registration statement, the written consent of the expert summarized in the document shall be filed as an exhibit to the registration statement. Please include the written consent of LEK Consulting in your first amendment to the registration statement. Also, please provide us with a copy of the document you are summarizing.

RESPONSE TO COMMENT 26:

The Company notes the Staff's comment and has filed, as Exhibit 23.3 to the Registration Statement, the consent of LEK Consulting. The enclosed binder of documents on which the Company is relying contain the LEK documents the Company cites in the Registration Statement.

License Agreements -- page 63

27. We note that you have not yet filed the license agreements described under this heading. Please file them with your first amendment. We may have comments regarding the disclosure about these agreements once we review them.

RESPONSE TO COMMENT 27:

The Company notes the Staff's comment and has filed the license agreements as Exhibits 10.2, 10.3 and 10.4 to the Registration Statement. These agreements have been redacted pursuant to the CTR.

28. We note your use of BMS' right to commercialize VEC-162 on its own if you have not entered into a partnering arrangement after the completion of the Phase III program as an example of BMS' rights with respect to VEC-162. All of BMS' material rights and obligations, as well as your material rights and obligation, should be described in this discussion. Please revise to describe all rights and obligations or revise to clarify that this in BMS' only material right under the agreement.

RESPONSE TO COMMENT 28:

In response to the Staff's comment, the Company has revised the disclosure on pages 18 and 19, and 65 and 66 of the Registration Statement to add descriptions of BMS' other material rights.

Patent and proprietary rights; Hatch-Waxman protection -- page 69

29. Please explain what a "new chemical entity" patent is and differentiate it from other patents.

RESPONSE TO COMMENT 29:

In response to the Staff's comment, the Company has added such an explanation in Amendment No. 1. Please see page 71.

Management -- page 72

Executive compensation -- page 76

30. Please update this disclosure to include 2005 compensation information, as well as the 2004 information.

RESPONSE TO COMMENT 30:

Amendment No. 1 provides this compensation information for 2005 as well as 2004.

Principal stockholders -- page 86

31. Please identify the natural person holding voting and ownership control over the shares owned by each non-natural person included in the ownership table.

RESPONSE TO COMMENT 31:

Except for Biomedical Sciences Investment Fund Pte. Ltd., in all cases where shares of the Company are owned by a non-natural person, voting and ownership control of such shares is determined by the vote or consent of the natural persons who are members of a controlling partnership or other controlling entity, and the natural persons who are voting members of each such controlling partnership or entity are disclosed in Amendment No. 1.

Biomedical Sciences Investment Fund Pte. Ltd. is wholly owned by EDB Private Investments Limited, which is itself wholly owned by the Economic Development Board of Singapore, a Singapore government agency. Additionally, the Company that manages the investments held by Biomedical Sciences Investment Fund Pte. Ltd., Bio*One Capital, is itself wholly owned by the Economic Development Board of Singapore. We have been advised by representatives of Bio*One Capital that, while the natural persons who are officers and directors of Bio*One Capital are publicly known, the identity of the individuals who vote or consent regarding the acquisition or divestiture of any securities held by Biomedical Sciences Investment Fund Pte. Ltd., including the securities of the Registrant, is classified information of the government of Singapore.

32. Please refer to footnotes 10-14 in which a number of your directors disclaim beneficial ownership of securities held by non-natural persons "except to the extent of his pecuniary interest therein." Item 403(a) of Regulation S-K requires directors to disclose their beneficial ownership interest in the registrant. Accordingly, please revise the footnotes to disclose the amount of each named person's pecuniary interest in the securities of the registrant.

RESPONSE TO COMMENT 32:

The Company notes the Staff's comment, but respectfully submits that the pecuniary interest, if any, of each named person in the Company's shares is incapable of being determined at this point in time. Each such person's interest in the Company's shares is held indirectly, by way of an equity interest in one or more controlling partnerships or other entities that, in turn, hold interests in the funds or other entities named in the respective footnotes to the principal stockholders' table. Whether or not any such person has, or ultimately will have, any pecuniary interest in such Company shares depends on a number of factors, including the financial

performance of the respective funds and the amount of capital that such funds ultimately return to their investors. In addition, the specific pecuniary interest of each named person in his applicable controlling partnership or other entity, as well the interest of each controlling partnership or other entity in the funds named in the principal stockholders' table, have not been disclosed to the Company and such information is considered to be confidential information of the respective funds.

Consolidated Financial Statements

Statements of Changes in Stockholders' Equity, page F-5

33. You disclose in Note 1 to the consolidated financial statements that Vanda was founded in November 2002 and commenced operations on March 13, 2003. Please disclose, and explain to us, why Vanda was founded and commenced operations with no stock. Please confirm that Care Capital LLC did not incur any expenses on your behalf from the date you were founded through the date you commenced operations. Please expand your disclosures in selected consolidated financial data section to clarify why a December 31, 2002 balance sheet is not presented. If Vanda had no (or nominal) assets or liabilities as of December 31, 2002, please include a statement to disclose this fact.

RESPONSE TO COMMENT 33:

The Company supplementally informs the Staff that the Company did not commence operations until March 13, 2003, the date on which it first issued capital stock. While the Company was legally incorporated in November 2002, the final business decision to start the Company's operations was not made until March of 2003. In the interim, the Company did not engage in any business activities.

The Company supplementally confirms to the Staff that Care Capital did not incur any expenses on the Company's behalf prior to March 13, 2003.

The Company has included additional disclosure in the consolidated financial statements to make clear that the Company had no assets or liabilities prior to March 13, 2003.

Notes to Consolidated Financial Statements

Note 6, Commitments, page F-23

34. We note that amounts paid to clinical research organizations and other outside contractors represented approximately 80% of direct costs for 2004 and the nine months ended September 30, 2005. However, related disclosure appears to be limited. Please disclose the principal terms of the related clinical agreements, including compensation arrangements, duration and contingent obligations. We note that you excluded amounts related to the agreements with clinical organizations from the table of contractual

obligations because these arrangements can be terminated without penalty. Explain more specifically your obligation under these termination provisions.

RESPONSE TO COMMENT 34:

In response to the Staff's comment, the Company has revised the financial pages and Management's discussion and analysis of financial condition and results of operations accordingly. Please see pages 46 as well as F-28 and F-24.

Note 8, Preferred and Common Stock, page F-24

Conversion, page, page F-25

35. Please disclose, and explain to us, how the $1.23 conversion price per share for the Series B Preferred Stock will be subject to adjustment from time to time, e.g. amount of adjustment, frequency and triggering events. Tell us how these adjustments were considered in your accounting for these instruments.

RESPONSE TO COMMENT 35:

The Company has revised the financial pages of the Registration Statement in response to the Staff's comment. Please see page F-26. The Company did not account for adjustments to the conversion price in the event that it issues shares of common stock (or securities convertible into or exercisable for common stock) at a price per share below the applicable conversion price then in effect. The Company did not account for any such adjustments because no such adjustments have occurred and such adjustments are unlikely to occur. If such an adjustment does occur, the Company will account for the change in conversion price.

Note 9, Beneficial Conversion Feature--Series B Convertible Preferred Stock, page F-26

36. You concluded that the issuances of Series B Convertible Preferred Stock in September and December 2005 resulted in a beneficial conversion feature. However, it appears that you concluded that the issuance of Series B Convertible Preferred Stock in September 2004 did not result in a beneficial conversion feature despite your retroactive fair value reassessment of your common stock for all options granted after December 2003. You indicate that this reassessment was based on discussions with your investment bankers, which began in November 2005. Please explain this apparent inconsistency.

RESPONSE TO COMMENT 36:

Please see the response enclosed with this letter as Exhibit A, which discusses in detail the methodology underlying our differing accounting treatment of the issuances of Series B Preferred Stock in 2004 and 2005.

Note 10, Management Equity Plan, page F-28

37. We note that you have not disclosed an estimated offering price. We are deferring a final evaluation of stock compensation and other costs recognized until the estimated offering price is specified and we may have further comment in this regard when the amendment containing that information is filed. In order for us to fully understand the equity fair market valuations reflected in your financial statements, please provide an itemized chronological schedule covering all equity instruments issued since January 1, 2004 through the date of your response and provide the following information separately for each equity issuance:

    a. The date of the transaction;

    b. The number of shares issued or options granted;

    c. The exercise price or per share amount paid;

    d. Management's fair market value per share estimate and how the estimate was made;

    e. An explanation of how the fair value of the convertible preferred stock and common stock relate;

    f. The identity of the recipient, indicating if the recipient was a related party;

    g. Nature and terms of concurrent transactions; and,

    h. The amount of any compensation or interest expense element.

    Also, progressively bridge management's fair market value determinations to the current estimated IPO price range. Please reconcile and explain the differences between the mid-point of your estimated offering price range and the fair values included in your analysis. Provide us with a chronology of events leading to the filing of your IPO including when discussions began with potential underwriters.

    Additionally, please provide the disclosures suggested by the AICPA Audit and Accounting Practice -- Valuation of Privately Held-Company Equity Securities Issued as Compensation.

    RESPONSE TO COMMENT 37:

    Please see the response enclosed with this letter as Exhibit A.

* * * *

Please do not hesitate to contact me at (781) 795-3670 if you have any questions or would like additional information regarding this matter.

Very truly yours,

Gunderson Dettmer Stough Villeneuve
Franklin & Hachigian, LLP

/s/ STEVEN L. BAGLIO

cc: Mihael H. Polymeropoulos, M.D., Vanda Pharmaceuticals Inc.
William D. Clark, Vanda Pharmaceuticals Inc.
Steven A. Shallcross, Vanda Pharmaceuticals Inc.
Jay K. Hachigian,Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP
Gregg A. Griner, Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP
Richard Truesdell,Davis Polk & Wardwell
Dana Willis, Davis Polk & Wardwell

EXHIBIT A

TO THE
FEBRUARY 16, 2006 LETTER TO THE
SECURITIES AND EXCHANGE COMMISSION
REGARDING THE
REGISTRATION STATEMENT ON FORM S-1 OF
VANDA PHARMACEUTICALS INC.
FILED ON DECEMBER 29, 2005

RESPONSE TO COMMENT 37

Equity Issuances

The following is an itemized chronological schedule covering all equity instruments issued by the Company since January 1, 2004:

| DATE OF ISSUANCE OR GRANTED | TYPE OF EQUITY ISSUED/OPTIONS | NUMBER OF SHARES | EXERCISE PRICE (PER SHARE) | FAIR MARKET VALUE ESTIMATE PER COMMON SHARE | EXPENSE OR AMOUNT PAID |
|---|---|---|---|---|---|
| 02/20/04 | Warrant | 121,500 | $0.40 | $0.48 | $27,945 (b) |
| 06/15/04 | Employee Options | 11,400 | $0.40 | $0.97 | $6,500 (c) |
| 09/01/04 | Employee Options | 303,400 | $0.40 | $1.23 | $252,000 (c) |
| 09/28/04 | Series B Preferred Stock | 15,040,654 | $1.23 | $1.23 | $ - |
| 12/06/04 | Employee Options | 2,573 | $0.40 | $1.72 | $3,000 (c) |
| 02/10/05 | Employee Options | 694,739 | $0.10 | $3.18 | $2,146,000 (c) |
| 04/05/05 | Employee Options | 92,000 | $0.10 | $4.83 | $435,000 (c) |
| 08/15/05 | Employee Options | 51,500 | $0.10 | | |

$5.09
$257,000 (c)
09/28/05
Employee
Options
2,055,272
$0.10 $5.09
$10,256,000
(c) 09/28/05
Series B
Preferred
15,040,654
$1.23 $5.09
$18,500,000
(d) Stock
10/03/05
Employee
Options 3,000
$0.10 $5.19
$15,000 (c)
11/14/05
Employee
Options
275,000 $0.25
$5.19
$1,356,000
(c) 12/09/05
Series B
Preferred
12,195,129
$1.23 $5.19
$15,000,000
(d) Stock
12/29/05
Employee
Options
1,187,763
$1.43 $5.19
$4,466,000
(c) 01/19/06
Employee
Options
18,333 $1.43
$5.19 $ TBD
(f)

Notes:

(a) Refer to Annex 1 for Common Stock Valuation Assessment Work Sheet.

(b) Represents general and administrative expense for consulting services.

(c) Represents total deferred stock-based compensation expense at date of issuance.

(d) Represents beneficial conversion charge.

(e) In February 2005, the Board of Directors approved a modification to all outstanding granted stock option awards, repricing the options from their original exercise price of $0.40 to $0.10. According to FIN 44, the result of such a modification is to account for the modified stock option awards as variable from the date of the modification to the date the awards are exercised, forfeited, or cancelled. The Company remeasured the modified awards that were outstanding at the end of each quarter during the year ended December 31, 2005, resulting in deferred stock compensation expense of $1,703,000. Compensation expense related to the remeasurement of modified stock options was approximately $3,120,000 for the year ended December 31, 2005. The charges related to modification of these options are not included in the table above.

(f) Represents option grant on 1/19/06. The expense recorded will be determined once management has completed its evaluation of assumptions to be used under FAS 123R.

Terms of Options

On June 15, 2004, September 1, 2004, December 6, 2004, February 10, 2005, April 5, 2005, August 15, 2005, September 28, 2005, October 3, 2005, November 14, 2005 and December 29, 2005, the Company issued to employees and one director options to acquire Common Stock. Options generally have a term of 10 years from the date of grant and vest over four years. With the exception of a grant made to one director on December 29, 2005, the first 25% of each option grant will vest upon the completion of 12 months of continuous service from the date the options are granted. These options will then continue to vest monthly for the remaining three years of the vesting period. With respect to the option grant made to one director the option award will vest monthly for forty-eight months.

Terms of Warrant

In February 2004 the Company issued warrants to a consultant to purchase 121,500 shares of the Company's Common Stock at an exercise price of $0.40 per share. The warrants were immediately exercisable, and the expiration date is February 20, 2014. The determination of the exercise price was the product of an arm's-length negotiation between the Company and the consultant. The estimated fair value of the common stock at the date of grant was $0.40. The warrants were valued using the Black-Scholes option pricing model at $0.23 per share based on the estimated fair value of the common stock of $0.40. The aggregate value of $27,945 was recorded as general and administrative expense for the year ended December 31, 2004. An adjustment of approximately $30,000 to record the additional expense based on the retrospective fair market value of

the warrants of the underling Common Stock was not recorded and deemed to be immaterial by the Company.

Terms of Series B Preferred Stock

On September 28, 2004 and 2005, and December 9, 2005, the Company issued an aggregate of 42,276,437 shares of its Series B Preferred Stock to Care Capital Investments II, LP, Care Capital Offshore Investments II, LP, BioMedical Sciences Investment Fund PTE LTD, Domain Partners VI, L.P., DP VI Associates, L.P., Prospect Venture Partners II, L.P. Prospect Associates II, L.P., Rho Ventures IV, L.P., Rho Ventures IV GmbH & Co. Beteiligungs KG, Rho Ventures IV (QP), L.P., Rho Management Trust I, and Medimmune Ventures, Inc. The sales price for the September 28, 2004 Series B Preferred Stock was the product of an arm's-length negotiation between the Company and the investors. The sales price for the September 28, 2005 and the December 9, 2005 Series B Preferred Stock was determined at September 28, 2004. Under the terms of the September 28, 2005 and December 9, 2005 Series B Preferred Stock purchase agreements the existing shareholders were not required to participate in the financings. The purchase price of the Series B Preferred Stock was $1.23 for all issuances.

The holders of the preferred stock are entitled to vote, together with the holders of Common Stock, on all matters submitted to stockholders for a vote. In addition, the holders of the Series B Preferred Stock are entitled to elect three of the Company's directors as long as a certain number of shares of Series B Preferred Stock remain outstanding. The holders of the Series B Preferred Stock are entitled to receive dividends, when and as declared by the Board of Directors and out of funds legally available and on parity with the holders of the Common Stock and any such dividend shall be distributed ratably among the holders of the Common Stock and the holders of the Preferred Stock as if all shares of Preferred Stock were to convert into Common Stock. The rights to such dividends shall not be cumulative and no right shall accrue to holders of Preferred Stock. In the event of any liquidation, dissolution or winding-up of the affairs of the Company, after payment of the debts and other liabilities of the Company, the holders of the then outstanding Series B Preferred Stock shall be entitled to receive, on a pari passu basis out of the assets of the Company, an amount equal to the liquidation preference. The liquidation preference per share of the Series B Preferred Stock is the greater of the original Series B purchase price or the amount per share of Series B Preferred Stock that the holder of the number of shares of Common Stock issuable upon conversion thereof would receive upon any such liquidation. The Series B Preferred Stock converts into Common Stock on a one-for-one basis.

Fair Market Value Per Share Estimates:

The Company's Board of Directors used its reasonable and best judgment in estimating the value of Common Stock at the date of each grant. On the date of each grant, the Board considered all relevant factors including recent stock issuances, the current financial condition of the Company, its stage of development and progress in executing its business plan, its progress in developing its proposed products and the lack of a public

market for its securities. Since the Company's inception in 2003, it has devoted substantially all of its efforts to the research, development, and clinical trials of its proposed products, in-licensing compounds, raising capital, and recruiting new employees. The Company continues to be a "development stage enterprise," and has not yet had any revenue from product sales. Given the uncertainty of the success of the Company's proposed products, significant unexpected risk exists regarding the value of the Company's Common Stock at any point in time. Establishing an estimated fair market value of the Company's Common Stock as a basis for determining the exercise price for options required considerable judgment in each case. In November 2005, the Company retained an independent valuation firm to determine the fair market value per share of the Common Stock as of December 2005. The valuation report gave an opinion as to the fair market value per share of the common stock of the Company as a going concern and not necessarily the value of the Company as a possible merger or sale candidate or in an initial public offering. The valuation report presented to the Company was the basis for determining the exercise price for the December 29, 2005 option grants. The valuation report dated December 9, 2005 is attached as Annex 2.

The per share purchase prices of the Preferred Stock issued since the Company's inception were established through a one-time arm's length negotiation as discussed above. Considering the illiquidity of the Common Stock, underlying stock options, and the liquidation preferences, redemption rights, and other rights of the Preferred Stock, which are superior to the Common Stock, the Company originally valued the Common Stock at a percentage of the value of the Preferred Stock.

The Company initially believed that the exercise price of all stock options was the actual fair value of the underlying Common Stock on each of the respective grant dates based on information available at each grant date. Since then, in connection with the filing of the Company's registration statement and the preparation of the financial statements included therein, the Company reviewed the pricing of all stock options granted. With the benefit of hindsight, the Company has considered the proximity of its projected public offering and has retroactively increased the estimated fair value of the Common Stock and recorded current and deferred stock-based compensation for options issued as well as beneficial conversion charges as deemed dividends in 2004 and 2005.

Because of the lack of a public trading market for the Common Stock, the Company used the following approach in estimating fair values for its Common Stock. The Company received valuations from several investment banks in November 2005 in preparation for a potential IPO in March 2006. The investment banks provided estimates to the Company of valuations on a pre-IPO basis. Based on the average of these valuations, the Company believes its pre-IPO valuation to approximate $300 million, which represents a value per Common Share on a fully-diluted basis of approximately $5.19 per share. The Company retroactively valued the Common Stock by discounting the estimated IPO price based on the timing and probabilities of major milestones or events compared to the estimated IPO price.

The estimated fair market value for the Company was then split between the Company's two lead programs. This value assignment was based on a discounted cash flow

assessment that was supported by detailed market studies performed by the Company's consultants (L.E.K.) as well as operating expense assumptions developed by the Company. The estimated fair market value of the Company was assigned to the Iloperidone (77%) and VEC-162 (23%) product candidates. Based on the estimated fair values of the Common Stock determined using these assumptions, the Company has recorded current and deferred stock-based compensation as well as beneficial conversion charges as described below.

Valuation Rationale for Common Stock Fair Value Estimates:

The estimated total fair market value of the Company is derived from three significant drivers: 1) obtaining and enhancing the value of the license agreements for Iloperidone and VEC-162 during 2004; 2) developing these two compounds through Phase II (VEC-162) and III (Iloperidone and VEC-162) clinical trials; and 3) hiring key personnel for the period 2004 through 2005 to develop the Company's portfolio of compounds and move them through clinical development, and position the Company for commercial growth. The Company accorded a different weight to each of these drivers (30%, 60% and 10%, respectively) based on their estimated relative importance to creating company value. The changes in estimated valuation for the Company's Common Stock are based on achieving success for the key drivers as they are described below.

1. License agreements. Value for each license agreement was assigned when the agreement was initially signed between the Company and the licensor. A greater percentage of value was assigned to Iloperidone compared to VEC-162 because Iloperidone was further along in the development process. As additional quantitative and qualitative data analysis was performed on the clinical trial results originally conducted by the innovators, the Company was able to rapidly develop a clinical development strategy of its own and execute on those plans during 2004 and 2005. The value for each license agreement increased from the period when the agreements were first entered into through the end of 2005. Given the importance of these license agreements and the opportunity for the Company to develop these compounds into drugs for commercial sale this key factor was accorded an overall estimated weight of 30% of the Company's estimated fair market value.

2. Clinical trials. The Company believes that success in its Phase II and III clinical trial development programs is the key driver in creating Company value. The Company has made several observations related to the clinical trials previously conducted by the licensors and has effectively utilized these findings to develop its clinical development strategy. Some of the opportunities identified relate to clinical trial design and execution. As a result, strategies were developed and incorporated into new clinical trial program protocols for the Company's ongoing and future clinical trials. In a series of meetings with the FDA, matters related to the Company's clinical trial design programs were discussed and subsequently agreed to by the FDA. These endorsements are important since they support the clinical strategy necessary for future regulatory filings. Consistent with the way

in which value was assigned to license agreements, the progress made by the Company for its compounds in clinical development has also resulted in an increase in the value of the Company for the period beginning June 2004 through the end of 2005. This factor was accorded an overall estimated weight of 60% of the Company's estimated fair market value.

3. Strong management and infrastructure. The Company has put in place a strong management and research and development team. During the Company's development period, beginning with the hiring of CEO, Mihael Polymeropoulos, M.D., the Company installed a team of expert scientists that were positioned to immediately conduct research and clinical development activities. These activities helped to create immediate value for the Company beginning in early 2004. Additional value was created following the hiring of other key personnel, such as the Chief Business Officer, VP of Regulatory Affairs, VP of Manufacturing, and Chief Financial Officer. This factor was accorded an overall estimated weight of 10% of the Company's estimated fair market value.

Calculated fair values for the Company's Common Stock as well as the current and deferred stock-based compensation and beneficial conversion charges are summarized below.

| Quarter Ending/ Transaction Date | Common Stock Fair Value | Rationale for Valuation and Related Charges |
|---|---|---|
| March 31, 2004 | $0.69 | The Company had not acquired any of the license agreements that are currently held, but it did have a solid core of management personnel in place. At this point in time a core group of eight senior managers of a total of eighteen employees was hired. Management estimates that 25% of the value weighted towards the management key driver was in place through Q1-2004. This results in an enterprise value of $7.5 million, or $0.69 per common share. |
| February 20, 2004 | | Grant of warrants to an accredited investor for the purchase of up to 121,500 common shares of the Company. The exercise price of the warrants of $0.40. The warrants were valued using the Black Schole's option pricing |

model at $0.23 and the aggregate value of $27,945 was recorded as general and administrative expense. June 30, 2004 $0.97 The license for VEC-162 was obtained. The Company started a research and Phase II clinical development program. Quantitative and qualitative data analysis work was conducted on the clinical trial results provided by the licensor. As a result, 5% of the value was assigned to both the license agreement and clinical trial drivers. There were no significant changes to management, thus no change to the value of the management driver. June 15, 2004 Grant of 11,400 stock options to employees of the Company. The Common Stock valuation is based on the Company's model using percentages of 5% for VEC-162 licensing, 5% for VEC-162 clinical trial activities and 25% for management. This results in an enterprise value of $10.6 million, or $0.97 per common share. Based on the difference between the exercise price of the options of $0.40 and the estimated fair market value of the Common Stock of $0.97 on June 15, 2004, the Company recorded a deferred stock-based compensation charge of $6,500. September 30, 2004 $1.23 The license for Iloperidone was obtained. The Company started a research and Phase III

clinical development program. Quantitative and qualitative data analysis work was conducted on the clinical trial results provided by the licensor. Though a higher initial value was assigned to Iloperidone compared to VEC-162, only 7% of the value for Iloperidone was assigned to the license agreement and clinical trial drivers because this was the first quarter in which formal clinical development activities were started by the Company. Clinical development activities continued on VEC-162, but did not have sufficient progress that would warrant an increase in value. Preparation work was underway for a Q4 FDA guidance meeting. The Chief Business Officer was hired in August 2004, which together with the development of the recently hired scientific staff resulted in an increase to the management driver from 25% to 50%. There were no other significant changes to management that the Company deemed to impact the value of the Company until 2005.

An increase in value for the quarter was also supported by the first closing of Series B Preferred Stock financing for $18.5 million, or $1.23 per share. This financing included the addition of four new outside investors. The terms of the financing were the product of an arm's-length negotiation between the Company and the investors. September 1, 2004 Grant of 303,400 stock options to employees of the Company. The Common Stock valuation is based on the Company's model using percentages of 7% and 5% for Iloperidone and VEC-162 licensing, respectively, 7% and 5% for Iloperidone and VEC-162 clinical trial activities, respectively and 50% for management. This results in an enterprise value of $32.4 million, or $1.23 per share of Common Stock. Based on the difference between the exercise price of the options of $0.40 and the estimated fair market value of the Common Stock of $1.23 on September 1, 2004, the Company recorded a deferred stock-based compensation charge of $252,000. September 28, 2004 Issuance of 15,040,654 shares of Series B Preferred Stock to two existing and four new investors at $1.23 per share, which was at the estimated fair market value of the Company's Common Stock on September 28,

2004. The Series B Preferred Stock is convertible into Common Stock on a one-for-one basis. December 31, 2004 $1.72 The Company conducted its initial guidance meeting with the FDA regarding its VEC-162 clinical program. The successful outcome of the meeting resulted in an increase in value for the VEC-162 license agreement and clinical trial drivers to 15%. Clinical development activities continued for the Company's VEC-162 Phase II clinical trial program. Iloperidone clinical development activities continued and the Company continued to review and further understand the clinical trial design results for clinical trials previously conducted by the licensor. The Company also continued work on its pharmacogenetic strategy for its future Phase III clinical program. This progress results in an increase of the license agreement and trial drivers to 10%. December 6, 2004 Grant of 2,573 stock options to employees of the company. The Common Stock valuation is based on the Company's model using percentages of 10% and 15% for Iloperidone and VEC-162 licensing, respectively, 10% and 15% for Iloperidone and VEC-

162 clinical trial activities, respectively and 50% for management. This results in an enterprise value of $45.1 million, or $1.72 per share of Common Stock. Based on the difference between the exercise price of the options of $0.40 and the estimated fair market value of the Common Stock of $1.72 on December 6, 2004, the Company recorded a deferred stock-based compensation charge of $3,000. March 31, 2005 $3.18 The Company began to generate additional data from prior Iloperidone clinical trials that were conducted by the licensor. Issues related to dosing, drop-out rates and statistical analysis methods were evaluated and strategies developed to address opportunities to improve the outcome of future clinical trials. This information increased the value of the license agreement and clinical trial drivers to 30% and 20%, respectively. Modest progress was also made for VEC-162 regarding its Phase II development activities. The value of the license agreement remained at 20% and the clinical trial driver increased to 25%. Management continued to make progress by adding key scientific personal, developing its overall development strategy, and making job

offers for the VP of Regulatory Affairs and VP of Manufacturing. This resulted in an increase to the management value driver to 75% February 10, 2005 Grant of 694,739 stock options to employees of the Company. The Common Stock valuation is based on the Company's model using percentages of 30% and 20% for Iloperidone and VEC-162 licensing, respectively, 20% and 25% for Iloperidone and VEC-162 clinical trial activities, respectively and 75% for management. This results in an enterprise value of $85.5 million, or $3.18 per share of Common Stock. Based on the difference between the exercise price of the options of $0.10 and the estimated fair market value of the Common Stock of $3.18 on February 10, 2005, the Company recorded a deferred stock-based compensation charge of $2,146,000. June 30, 2005 $4.83 An FDA general guidance meeting was held to discuss the future Iloperidone Phase III clinical trial and the Pharmacogenetic element of the study. The meeting was deemed to be a success because agreement was reach with the FDA on the Company's

Phase III clinical trial protocol for the trial and the specifics related to product labeling for pharmacogenetics. As a result of this meeting the Company increased the value of the trial and license agreement drivers to 40% each. VEC-162 completed a successful Phase II clinical trial by meeting its predefined clinical end-points resulting in both the license agreement and clinical trial drivers increasing in value to 40% each. April 5, 2005 Grant of 92,000 stock options to employees of the Company. The Common Stock valuation is based on the Company's model using percentages of 40% and 40% for Iloperidone and VEC-162 licensing, respectively, 40% and 40% for Iloperidone and VEC-162 clinical trial activities, respectively and 75% for management. This results in an enterprise value of $130.5 million, or $4.83 per share of Common Stock. Based on the difference between the exercise price of the options of $0.10 and the estimated fair market value of the Common Stock of $4.83 on April 5, 2005, the Company recorded a deferred stock-based compensation charge of $435,000. September 30, 2005 $5.09 An Iloperidone Phase II(b) and statistical guidance meeting was held with

the FDA. The meetings resulted in agreement on how the Company would conduct its Phase III pivotal clinical trial and method of statistical analysis that would be used to evaluate the data at the conclusion of the study. This resulted in an increase in the license agreement and clinical trial drivers to 75% each. Based on the positive VEC-162 Phase II results the Company initiated clinical development activities for a Phase III clinical trial. These results increased the weight of the license agreement and clinical trial drivers to 75% each. An increase in value for the quarter was also supported by the second closing of the Series B Preferred Stock financing for $18.5 million, or $1.23 per share. This financing included the participation of all existing investors and demonstrated a level of investor confidence that both compounds were progressing as expected. The terms of the financing were the product of an arm's-length negotiation that took place in September 2004 between the Company and the investors.

August 15, 2005 Grant of 51,500 stock options to employees of the Company. The Common Stock valuation is based on the Company's model using percentages of 75% and 75% for Iloperidone and VEC-162 licensing, respectively, 75% and 75% for Iloperidone and VEC-162 clinical trial activities, respectively and 75% for management. This results in an enterprise value of $225.0 million, or $5.09 per share of Common Stock. Based on the difference between the exercise price of the options of $0.10 and the estimated fair market value of the Common Stock of $5.09 on August 15, 2005, the Company recorded a deferred stock-based compensation charge of $257,000. September 28, 2005 Grant of 2,055,272 stock options to employees of the Company. Based on the difference between the exercise price of the options of $0.10 and the estimated fair market value of the Common Stock of $5.09 on September 28, 2005, the Company recorded a deferred stock-based compensation charge of $10,256,000. September 28, 2005 Issuance of 15,040,654 shares of Series B Preferred Stock to all existing investors at $1.23 per share, which was below the estimated fair market value of the Company's Common Stock of $5.09 on September 28, 2005. The Series

B Preferred Stock is convertible into Common Stock on a one-for-one basis. Accordingly, the Company recorded a "non-cash beneficial conversion charge" in the form of a deemed dividend in the amount of $18.5 million for the difference between the estimated fair market value and the issue price at the date of issuance of the Preferred Stock. The beneficial conversion charge is limited to the total proceeds received for the Preferred Stock issuance. December 31, 2005 $5.19 Iloperidone began its Phase III trials and VEC-162 continued to make progress with clinical development activities. The overall success for both compounds resulted in the increase in both the license agreement and trial drivers to 100% of its estimated fair value. This is consistent with the Company obtaining its valuations from multiple investment bankers (described above). The hiring of a Chief Financial Officer, the approval of the investment bankers for an IPO, and organizing an IPO organizational meeting with all necessary parties (underwriters, lawyers, and accountants) resulted in the increase of the

management driver to 100% of its estimated fair value. October 3, 2005 Grant of 3,000 stock options to employees of the Company. The Common Stock valuation is based on the Company's model using percentages of 100% and 100% for Iloperidone and VEC-162 licensing, respectively, 100% and 100% for Iloperidone and VEC-162 clinical trial activities, respectively and 100% for management. This results in an enterprise value of $300.0 million, or $5.19 per share of Common Stock. Based on the difference between the exercise price of the options of $0.10 and the estimated fair market value of the Common Stock of $5.19 on October 3, 2005, the Company recorded a deferred stock-based compensation charge of $15,000. November 14, 2005 Grant of 275,000 stock options to employees of the Company. Based on the difference between the exercise price of the options of $0.25 and the estimated fair market value of the Common Stock of $5.19 on November 14, 2005, the Company recorded a deferred stock-based compensation charge of $1,356,000. December 9, 2005 Issuance of 12,195,129 shares in a third closing of the Series B Preferred Stock financing to all existing investors at $1.23 per share, which was below the estimated

fair market value of the Company's Common Stock of $5.19 on December 9, 2005. The Series B Preferred Stock is convertible into Common Stock on a one-for-one basis. Accordingly, the Company recorded a "non-cash beneficial conversion charge" in the form of a deemed dividend in the amount of $15.0 million for the difference between the estimated fair market value and the issue price at the date of issuance of the Preferred Stock. The beneficial conversion charge is limited to the total proceeds received for the Preferred Stock issuance.

December 29, 2005 Grant of 1,187,763 stock options to employees of the Company. Based on the difference between the exercise price of the options of $1.43 and the estimated fair market value of the Common Stock of $5.19 on December 29, 2005, the Company recorded a deferred stock-based compensation charge of $4,466,000.

Mechanics of per share calculation

The fully-diluted shares outstanding as of each quarter end were used to determine the estimated fair market value per share of the Company's Common Stock. Along with the Common Stock outstanding, the equity equivalents included in the fully-diluted shares

calculation are Series A (issued in 2003) and Series B Convertible Preferred Stock, stock options, and warrants.

AICPA Audit and Accounting Practice - Valuation of Privately-Held-Company Equity Securities Issued as Compensation Disclosure

As result of the retrospective review of the fair market value of its Common Stock the Company has disclosed in the Critical Accounting Policy section of the Company's management discussion and analysis of financial condition and results of operations section of the filing, the factors considered and the methods used in determining fair market value.

Conclusion

As a result of the retrospective review of the equity issuances described above, the Company has recorded $1,276,000 of current stock-based compensation for the year ended December 31, 2005 and $17,770,000 of deferred stock-based compensation as of December 31, 2005. In addition the Company will record $33,500,000 of beneficial conversion charges for the year ended December 31, 2005. The Company believes that the above discussion adequately bridges management's fair market value determinations to the current estimated IPO price range and reconciles the price range to the fair values included in the analysis.

ANNEX 1 TO EXHIBIT A

VANDA PHARMACEUTICALS INC.
COMMON STOCK VALUATION ASSESSMENT WORKSHEET
ANNEX 1

| | | | VALUE ASSIGNMENT PERCENTAGE | | | |
|---|---|---|---|---|---|---|
| | | | 2004 | | | |
| VALUATION DRIVERS | DRIVER WEIGHT | | Q1 | Q2 | Q3 | Q4 |
| License Agreements | 30% | | | | | |
| Iloperidone (7/04) | | | 0% | 0% | 7% | 10% |
| VEC-162 (3/04) | | | 0% | 5% | 5% | 15% |
| Phase III Clinical Trial Starts | 60% | | | | | |
| Iloperidone | | | 0% | 0% | 7% | 10% |
| VEC-162 (Validates Technology) | | | 0% | 5% | 5% | 15% |
| Management | 10% | | 25% | 25% | 50% | 50% |
| | 100% | | | | | |
| PRE-MONEY VALUE AT 12/31/05 (AS DETERMINED 11/30/05) | $300,000,000 | | | | | |
| VALUE SPLIT PERCENTAGE | | | | | | |
| ILOPERIDONE | | 77% | $231,000,000 | | | |
| VEC-162 | | 23% | $ 69,000,000 | | | |

| | VALUE ASSIGNMENT PERCENTAGE | | | |
|---|---|---|---|---|
| | 2005 | | | |
| VALUATION DRIVERS | Q1 | Q2 | Q3 | Q4 |
| License Agreements | | | | |
| Iloperidone (7/04) | 30% | 40% | 75% | 100% |
| VEC-162 (3/04) | 20% | 40% | 75% | 100% |
| Phase III Clinical Trial Starts | | | | |
| Iloperidone | 20% | 40% | 75% | 100% |
| VEC-162 (Validates Technology) | 25% | 40% | 75% | 100% |
| Management | 75% | 75% | 75% | 100% |

PRE-MONEY VALUE AT 12/31/05
(AS DETERMINED 11/30/05)
VALUE SPLIT PERCENTAGE
ILOPERIDONE
VEC-162

| | | VALUE ASSIGNMENT (DOLLARS) | | | |
|---|---|---|---|---|---|
| | | 2004 | | | |
| VALUATION DRIVERS | WEIGHTED VALUE | Q1 | Q2 | Q3 | Q4 |
| License Agreements | | | | | |
| Iloperidone (7/04) | $ 69,300,000 | $ -- | $ -- | $ 4,573,800 | $ 6,930,000 |
| VEC-162 (3/04) | $ 20,700,000 | $ -- | $ 1,035,000 | $ 1,035,000 | $ 3,105,000 |
| Phase III Clinical Trial Starts | | | | | |
| Iloperidone | $138,600,000 | $ -- | $ -- | $ 9,702,000 | $13,860,000 |
| VEC-162 | $ 41,400,000 | $ -- | $ 2,070,000 | $ 2,070,000 | $ 6,210,000 |
| Management | $ 30,000,000 | $ 7,500,000 | $ 7,500,000 | $15,000,000 | $15,000,000 |
| Total Value | $300,000,000 | $ 7,500,000 | $10,605,000 | $32,380,800 | $45,105,000 |
| Number of shares on a fully diluted basis | 57,843,029 | 10,871,445 | 10,882,845 | 26,226,899 | 26,229,472 |
| Value per share | $ 5.19 | $ 0.69 | $ 0.97 | $ 1.23 | $ 1.72 |

| | VALUE ASSIGNMENT (DOLLARS) | | | |
|---|---|---|---|---|
| | 2005 | | | |
| VALUATION DRIVERS | Q1 | Q2 | Q3 | Q4 |
| License Agreements | | | | |
| Iloperidone (7/04) | $20,790,000 | $ 27,720,000 | $ 51,975,000 | $ 69,300,000 |
| VEC-162 (3/04) | $ 4,140,000 | $ 8,280,000 | $ 15,525,000 | $ 20,700,000 |
| Phase III Clinical Trial Starts | | | | |
| Iloperidone | $27,720,000 | $ 55,440,000 | $103,950,000 | $138,600,000 |
| VEC-162 | $10,350,000 | $ 16,560,000 | $ 31,050,000 | $ 41,400,000 |
| Management | $22,500,000 | $ 22,500,000 | $ 22,500,000 | $ 30,000,000 |
| Total Value | $85,500,000 | $130,500,000 | $225,000,000 | $300,000,000 |
| Number of shares on a fully diluted basis | 26,924,211 | 27,016,211 | 44,182,137 | 57,843,029 |
| Value per share | $ 3.18 | $ 4.83 | $ 5.09 | $ 5.19 |

ANNEX 2 TO EXHIBIT A

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[*]CERTAIN INFORMATION ON THIS PAGE HAS BEEN OMITTED AND FILED SEPARATELY WITH THE COMMISSION. CONFIDENTIAL TREATMENT HAS BEEN REQUESTED WITH RESPECT TO THE OMITTED INFORMATION AND CERTAIN RELATED MATERIALS FILED WITH THE COMMISSION UNDER 17 CFR 200.83.