

TITAN PHARMACEUTICALS INC

Form S-1/A

October 28, 2005

As filed with the Securities and Exchange Commission on October 28, 2005

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

AMENDMENT No. 1
to
Form S-1

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

Titan Pharmaceuticals, Inc.

(Exact name of Registrant as specified in its charter)

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| | | |
|---|---|--|
| Delaware | 2836 | 94-3171940 |
| (State or Other Jurisdiction of Incorporation or Organization) | (Primary Standard Industrial Classification Code Number) | (I.R.S. Employer Identification Number) |

**400 Oyster Point Blvd.
Suite 505
South San Francisco, CA 94080**

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

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Approximate date of commencement of proposed sale to the public: From time to time after this Registration Statement becomes effective.

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

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

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

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

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

CALCULATION OF REGISTRATION FEE

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| Title of Each Class of Securities to be Registered | Amount to be Registered(1) | Proposed Maximum Offering Price Per Security | Proposed Maximum Aggregate Offering Price(2) | Amount of Registration Fee |
|--|----------------------------|--|--|----------------------------|
| Common Stock, par value \$.001 per share | 21,819,923 \$ | 1.70 \$ | 37,093,869.1 \$ | 4,365.95(3) |

(1) Pursuant to Rule 416 of the Securities Act of 1933, as amended, the shares of common stock offered hereby also include such presently indeterminate number of shares of our common stock as shall be issued by us to the selling shareholders as a result of stock splits, stock dividends or similar transactions.

(2) Estimated solely for the purpose of calculating the amount of the registration fee pursuant to Rule 457(c) under the Securities Act of 1933. For this purpose, we have used the closing price as reported on the American stock Exchange on October 12, 2005.

(3) Previously Paid.

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

INFORMATION CONTAINED HEREIN IS SUBJECT TO COMPLETION OR AMENDMENT. A REGISTRATION STATEMENT RELATING TO THESE SECURITIES HAS BEEN FILED WITH THE SECURITIES AND EXCHANGE COMMISSION. THESE SECURITIES MAY NOT BE SOLD UNTIL THE REGISTRATION STATEMENT BECOMES EFFECTIVE. THIS PROSPECTUS IS NOT AN OFFER TO SELL AND IS NOT A SOLICITATION OF AN OFFER TO BUY IN ANY STATE IN WHICH AN OFFER, SOLICITATION, OR SALE IS NOT PERMITTED.

SUBJECT TO COMPLETION, DATED October 28, 2005

PROSPECTUS

TITAN PHARMACEUTICALS, INC.

21,819,923 Shares of Common Stock

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This prospectus relates to the offer and sale of up to 21,819,923 shares of common stock of Titan Pharmaceuticals, Inc. (we, us, our or Titan) by certain persons who are stockholders of Titan, including Cornell Capital Partners, LP (Cornell Capital Partners).

We are not selling any shares of common stock in this offering and therefore we will not receive any of the proceeds from this offering. We will, however, receive proceeds from the sale of common stock under the Standby Equity Distribution Agreement that we entered into as of September 28, 2005 with Cornell Capital Partners. All costs associated with this registration will be borne by us.

The shares of common stock are being offered for sale by the selling stockholders at prices established on the American Stock Exchange during the term of this offering. On October 12, 2005, the last reported sale price of our common stock was \$1.70 per share. Our common stock is presently listed on the American Stock Exchange under the symbol TTP.

Cornell Capital Partners is an underwriter within the meaning of the Securities Act of 1933 in connection with the sale of common stock it acquires pursuant to the Standby Equity Distribution Agreement. No other underwriter or person has been engaged to facilitate the sale of shares of common stock in this offering. This offering will terminate twenty-four months after the accompanying registration statement is declared effective by the Securities and Exchange Commission.

Cornell Capital Partners will pay us the lowest daily volume weighted average price of our common stock as quoted by Bloomberg, LP during the five consecutive trading day period immediately following the date we notify Cornell Capital Partners that we desire to make a draw-down under the Standby Equity Distribution Agreement. In addition, Cornell Capital Partners will retain 5% of each draw-down under the Standby Equity Distribution Agreement and we are required to pay Yorkville Advisors Management, LLC, the investment manager for Cornell Capital Partners, \$500 for each draw-down. We paid Cornell Capital Partners a one-time commitment fee equal to \$140,000 in the form of 75,407 shares of common stock and paid Yorkville Advisors Management a structuring fee of \$10,000, all of which are underwriting discounts payable or paid to Cornell Capital Partners.

Brokers or dealers effecting transactions in these shares should confirm that the shares are registered under the applicable state securities laws or that an exemption from registration is available.

These securities are speculative and involve a high degree of risk. You should purchase securities only if you can afford a complete loss of your investment. See Risk Factors beginning on page 4.

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PROSPECTUS SUMMARY

This summary highlights selected information appearing elsewhere in this prospectus. While this summary highlights what we consider to be the most important information about us, you should carefully read this prospectus and the registration statement of which this prospectus is a part in their entirety before investing in our common stock, especially the risks of investing in our common stock, which we discuss later in Risk Factors, and our financial statements and related notes beginning on page F-1. Unless the context requires otherwise, the words we, us and our refer to Titan Pharmaceuticals, Inc.

About Titan Pharmaceuticals, Inc.

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We are a biopharmaceutical company developing proprietary therapeutics for the treatment of central nervous system (CNS) disorders, cardiovascular disease, bone disease and other disorders. Our product development programs focus primarily on large pharmaceutical markets with significant unmet medical needs and commercial potential. We are focused primarily on clinical development of the following products:

Probuphine: for the treatment of opioid dependence and chronic pain

Iloperidone: for the treatment of schizophrenia and related psychotic disorders (partnered with Vanda Pharmaceuticals, Inc.)

Spheramine: for the treatment of advanced Parkinson's disease (partnered with Schering AG)

DITPA: for the treatment of congestive heart failure and hyperlipidemia

Gallium maltolate: for the treatment of cancer, bone related diseases and chronic bacterial infections

We were incorporated in Delaware in February 1992 and have funded our operations through various sources, including an initial public offering in January 1996 and private placements of securities, as well as proceeds from warrant and option exercises, corporate licensing and collaborative agreements, and government-sponsored research grants.

Summary of the Offering

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This offering relates to the sale of common stock by selling stockholders consisting of (i) Cornell Capital Partners, which intends to sell up to 21,819,923 shares of common stock, 21,739,130 of which shares may be purchased by Cornell Capital Partners from Titan under the Standby Equity Distribution Agreement and 75,407 of which shares were issued to Cornell Capital Partners upon the signing of the Standby Equity Distribution Agreement as a commitment fee, and (ii) Monitor Capital, Inc., which intends to sell up to 5,386 shares of common stock that were issued to it as a placement agent fee.

Pursuant to the Standby Equity Distribution Agreement, we may, at our discretion, periodically issue and sell to Cornell Capital Partners shares of common stock for a total purchase price of up to \$35 million. The amount of each draw-down is subject to a maximum draw-down amount of \$2 million, and we may not submit any request for a draw-down within five trading days of a prior request. Cornell Capital Partners will pay us the lowest daily volume weighted average price of our common stock during the five consecutive trading day period immediately following the date we notify Cornell Capital Partners that we desire to access the Standby Equity Distribution Agreement. Cornell Capital Partners shall retain 5% of each draw-down it makes to us and we are required to pay Yorkville Advisors Management, LLC, the investment manager for Cornell Capital Partners, \$500 for each draw-down. We paid Cornell Capital Partners a one-time commitment fee equal to \$140,000 in the form of 75,407 shares of common stock and paid Yorkville Advisors Management a structuring fee of \$10,000, all of which are underwriting discounts payable or paid to Cornell Capital Partners. We understand that Cornell Capital Partners intends to sell any shares purchased under the Standby Equity Distribution Agreement at the then prevailing market price. Among other things, this prospectus relates to the shares of common stock to be issued under the Standby Equity Distribution

Agreement. There are substantial risks to investors as a result of the issuance of shares of common stock under the Standby Equity Distribution Agreement. These risks include dilution of stockholders, significant decline in our stock price and our inability to draw sufficient funds when needed.

There is an inverse relationship between our stock price and the number of shares to be issued under the Standby Equity Distribution Agreement in exchange for a cash payment of a particular size. That is, as our stock price declines, we would be required to issue a greater number of shares under the Standby Equity Distribution Agreement for a given draw-down. This inverse relationship is demonstrated by the following table, which shows the number of shares to be issued under the Standby Equity Distribution Agreement assuming that we draw-down the Standby Equity Distribution Agreement in full at \$1.61 per share (the closing price of our common stock on October 6, 2005) and at a 25%, 50% and 75% discount to that price.

| | Market Price: \$1.61 | Market Price: \$1.21 | Market Price: \$0.81 | Market Price: \$0.40 |
|--------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| No. of Shares (1): | 21,739,130 | 28,925,620 | 43,209,877 | 87,500,000 |
| Total Outstanding (2): | 54,212,558 | 61,399,048 | 75,683,305 | 119,973,428 |
| Percent Outstanding (3): | 66.9% | 89.1% | 133.1% | 269.5% |
| Net Cash to Access (4): | \$ 33,115,000 | \$ 33,115,000 | \$ 33,115,000 | \$ 33,115,000 |

(1) Represents the number of shares of common stock which could be issued to Cornell Capital Partners under the Standby Equity Distribution Agreement at the prices set forth in the table.

(2) Represents the total number of shares of common stock outstanding after the issuance of the shares to Cornell Capital Partners under the Standby Equity Distribution Agreement, including the 75,407 shares issued to Cornell Capital Partners as a commitment fee and the 5,386 shares issued to Monitor Capital, Inc., as a placement agent fee.

(3) Represents the shares of common stock to be issued as a percentage of the total number shares outstanding as of October 6, 2005.

(4) Net cash equals the gross proceeds minus the 5% fee to be paid to Cornell Capital Partners, the \$10,000 fee paid to Yorkville Advisors Management and approximately \$125,000 in offering expenses.

We engaged Monitor Capital, Inc., a registered broker-dealer, to act as placement agent in connection with the Standby Equity Distribution Agreement. We paid Monitor Capital, Inc. a fee of \$10,000 in the form of 5,386 shares of our common stock as of September 28, 2005, under a Placement Agent Agreement.

Common Stock Offered 21,819,923 shares by the selling stockholders

Offering Price Market Price

Common Stock Outstanding Before the Offering 32,473,428 shares as of October 6, 2005

Use of Proceeds We will not receive any proceeds of the shares offered by the selling stockholders. Any proceeds we receive from the sale of common stock under the Standby Equity Distribution Agreement will be used

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for general working capital purposes. See Use of Proceeds.

Risk Factors

The securities offered hereby involve a high degree of risk. See Risk Factors beginning on page 4.

American Stock Exchange symbol TTP

Selected Condensed Financial Information

The statements of operations data for the years ended December 31, 2002, 2003 and 2004 and the balance sheet data as of December 31, 2003 and 2004 are derived from our audited consolidated financial statements and footnotes thereto included in the section beginning on page F-1. The statements of operations data for the years ended December 31, 2000 and 2001 and the balance sheet data as of December 31, 2000, 2001 and 2002 have been derived from our audited consolidated financial statements not included in this prospectus. We have also included data for the six months ended June 30, 2004 and 2005 from our unaudited interim consolidated financial statements included in the section beginning on page F-1. This data should be read together with our consolidated financial statements and related footnotes thereto included in the section beginning on page F-1 and the information under Management's Discussion and Analysis of Financial Condition and Results of Operations.

| | Six Months Ended June 30, (unaudited) | | Year Ended December 31, | | | | |
|---|---|-------------|-------------------------|-------------|-------------|-------------|-------------|
| | 2005 | 2004 | 2004 | 2003 | 2002 | 2001 | 2000 |
| (in thousands, except per share data) | | | | | | | |
| Statement of Operations Data: | | | | | | | |
| Total revenue(1) | \$ 27 | \$ 1 | \$ 31 | \$ 89 | \$ 2,892 | \$ 4,572 | \$ 1,880 |
| Operating expenses: | | | | | | | |
| Research and development | 9,722 | 9,711 | 20,415 | 22,258 | 29,819 | 23,339 | 16,744 |
| Acquired/in-process research and development(2) | | | 759 | 3,896 | | | 4,969 |
| General and administrative | 2,600 | 2,486 | 5,237 | 5,109 | 5,076 | 5,383 | 4,070 |
| Other income, net | 257 | 260 | 376 | 1,285 | 3,821 | 6,686 | 5,115 |
| Net loss | \$ (12,038) | \$ (11,936) | \$ (26,004) | \$ (29,889) | \$ (28,182) | \$ (17,464) | \$ (18,788) |
| Basic and diluted net loss per share | \$ (0.37) | \$ (0.39) | \$ (0.83) | \$ (1.07) | \$ (1.02) | \$ (0.63) | \$ (0.73) |
| Shares used in computing basic and diluted net loss per share | 32,350 | 30,558 | 31,381 | 27,907 | 27,642 | 27,595 | 25,591 |

(1) Revenues for 2001 include \$2.5 million license fee payment from Novartis for the development and commercialization of iloperidone in Japan. Revenues for 2002 include a \$2.0 million milestone payment from Schering.

(2) Acquired research and development reflects the acquisition of the minority shares of Proneura in 2004, the acquisition of DTI in 2003 and in-process research and development reflects the acquisition of GeoMed in 2000.

| | As of June 30, (unaudited) | | As of December 31, | | | | |
|---|-------------------------------|-----------|--------------------|-----------|-----------|------------|------------|
| | 2005 | 2004 | 2004 | 2003 | 2002 | 2001 | 2000 |
| (in thousands) | | | | | | | |
| Balance Sheet Data: | | | | | | | |
| Cash, cash equivalents, and marketable securities | \$ 24,279 | \$ 48,469 | \$ 36,322 | \$ 46,555 | \$ 73,450 | \$ 105,051 | \$ 117,523 |
| Working capital | 21,943 | 47,103 | 33,760 | 44,578 | 70,702 | 100,193 | 115,386 |
| Total assets | 26,505 | 50,932 | 38,626 | 49,008 | 75,926 | 107,132 | 118,442 |
| Total stockholders equity | 21,834 | 47,058 | 33,713 | 44,426 | 70,740 | 100,127 | 114,738 |

RISK FACTORS

Any investment in our securities involves a high degree of risk. You should carefully consider the risks described below, which we believe are all the material risks to our business, together with the information contained elsewhere in this prospectus, before you make a decision to invest in our company.

We have a history of operating losses and may never be profitable.

From our inception through June 30, 2005, we had an accumulated deficit of approximately \$197.8 million. We will continue to incur losses for the foreseeable future as a result of the various costs associated with our research, development, financial, administrative, regulatory and management activities. We may never achieve or sustain profitability.

Our products are at various stages of development and may not be successfully developed or commercialized.

We do not currently have any products being sold on the commercial market. Our proposed products are at various stages of development, but all will require significant further capital expenditures, development, testing, and regulatory clearances prior to commercialization. Of the large number of drugs in development, only a small percentage successfully complete the U.S. Food and Drug Administration (FDA) regulatory approval process and are commercialized. We are subject to the risk that some or all of our proposed products:

will be found to be ineffective or unsafe;

will not receive necessary regulatory clearances;

will be unable to get to market in a timely manner;

will not be capable of being produced in commercial quantities at reasonable costs;

will not be successfully marketed; or

will not be widely accepted by the physician community.

To date, we have experienced setbacks in some of our product development efforts. The results of a study evaluating the EKG profile of patients taking iloperidone, for example, found that iloperidone appeared to prolong the cardiac QTc interval, potentially a cause for concern. While iloperidone was shown to have a similar QTc profile to ziprasidone (Geodon), a product already approved by the FDA, these results significantly delayed the regulatory filings for that product and we cannot predict when, if ever, the development program for iloperidone will advance.

We previously announced study results with CeaVac that did not meet their primary endpoint, and, as a result, we have determined to discontinue our internal activities in the development of the monoclonal antibodies CeaVac, TriAb, and TriGem.

In June 2004, we announced that an interim safety analysis by an independent data monitoring committee, or IDMC, had identified significant safety issues in the combination treatment of Pivanex with docetaxel. The randomized study evaluating treatment with Pivanex and docetaxel versus docetaxel alone had already completed its enrollment target of 225 patients at the time of such interim safety analysis. As a result of the IDMC findings and upon its recommendation, we discontinued the combination treatment of Pivanex and docetaxel for the remaining patients on the study. Further development of Pivanex for treatment of lung cancer was also discontinued.

Our Spheramine product is based upon new technology which may be risky and fail to show efficacy. We are not aware of any other cell therapy products for CNS disorders that have been approved by the FDA or any similar foreign government entity and cannot assure you that we will be able to obtain the required regulatory approvals for any products based upon such technology.

We may continue to experience unanticipated problems relating to product development, testing, regulatory compliance, manufacturing, marketing and competition, and our costs and expenses could exceed current estimates. We cannot predict whether we will successfully develop and commercialize any products.

We must comply with extensive government regulations.

Our research, development, preclinical and clinical trial activities and the manufacture and marketing of any products that we may successfully develop are subject to an extensive regulatory approval process by the FDA and other regulatory agencies in the U.S. and other countries. The process of obtaining required regulatory approvals for drugs, including conducting preclinical and clinical testing to determine safety and efficacy, is lengthy, expensive and uncertain. Even after such time and expenditures, we may not obtain necessary regulatory approvals for clinical testing or for the manufacturing or marketing of any products. We have limited experience in obtaining FDA approval. Regulatory approval may entail limitations on the indicated usage of a drug, which may reduce the drug's market potential. Even if regulatory clearance is obtained, post-market evaluation of the products, if required, could result in restrictions on a product's marketing or withdrawal of the product from the market, as well as possible civil and criminal sanctions. Our regulatory submissions may be delayed or we may cancel plans to make submissions for proposed products for a number of reasons, including:

unanticipated preclinical testing or clinical trial reports;

changes in regulations or the adoption of new regulations;

unanticipated enforcement of existing regulations;

unexpected technological developments; and

developments by our competitors.

Consequently, we cannot assure you that we will make our submissions promptly, or at all, or that our submissions will receive approval from the FDA. If our corporate partners and we are unable to obtain regulatory approval for our products, our business will be seriously harmed.

In addition, we and our collaborative partners may be subject to regulation under state and federal laws, including requirements regarding occupational safety, laboratory practices, environmental protection and hazardous substance control, and may be subject to other local, state, federal and foreign regulation. We cannot predict the impact of such regulation on us, although it could seriously harm our business.

We face risks associated with third parties conducting preclinical studies and clinical trials of our products as well as our dependence on third parties to manufacture any products that we may successfully develop.

We depend on third-party laboratories and medical institutions to conduct preclinical studies and clinical trials for our products and other third-party organizations to perform data collection and analysis, all of which must maintain both good laboratory and good clinical practices. We will also depend upon third party manufacturers for the production of any products we may successfully develop to comply with current Good Manufacturing Practices of the FDA, which are similarly outside our direct control. If third party laboratories and medical institutions conducting studies of our products fail to maintain both good laboratory and clinical practices, the studies could be delayed or have to be repeated. Similarly, if the manufacturers of any products we develop in the future fail to comply with Good Manufacturing Practices of the FDA, we may be forced to cease manufacturing such product until we found another third party to manufacture the product.

We face many uncertainties relating to our human clinical trial strategy and results.

In order to obtain the regulatory approvals that we need to commercialize any of our product candidates, we must demonstrate that each product candidate is safe and effective for use in humans for each target indication. The results of preclinical and Phase I and Phase II clinical studies are not necessarily indicative of whether a product will demonstrate safety and efficacy in large patient populations. Although two of our product candidates have reached Phase III human clinical trials, results from the studies have not supported a regulatory filing. Several other product candidates are currently advancing into Phase II human clinical trials. We may not be able to demonstrate that any

of our product candidates will be safe or effective in advanced trials that involve larger numbers of patients. Clinical trials are subject to oversight by institutional review boards and the FDA and:

must be conducted in conformance with the FDA's good laboratory practice regulations;

must meet requirements for institutional review board oversight;

must meet requirements for informed consent;

must meet requirements for good clinical practices;

are subject to continuing FDA oversight; and

may require large numbers of test subjects.

As described above in our products are at various stages of development and may not be successfully developed or commercialized, our product development programs have in the past been and may in the future be curtailed, redirected or eliminated at any time for some or all of the following reasons:

unanticipated, negative or ambiguous results;

undesirable side effects which delay or extend the trials;

our inability to locate, recruit and qualify a sufficient number of patients for our trials;

regulatory delays or other regulatory actions;

difficulties in manufacturing sufficient quantities of the particular product candidate or any other components needed for our preclinical testing or clinical trials;

change in the focus of our development efforts; and

reevaluation of our clinical development strategy.

Accordingly, our clinical trials may not proceed as anticipated or otherwise adequately support our applications for regulatory approval.

We face risks associated with clinical trial liability claims in the event that the use or misuse of our product candidates results in personal injury or death.

We face an inherent risk of clinical trial liability claims in the event that the use or misuse of our product candidates results in personal injury or death. Our clinical liability insurance coverage may not be sufficient to cover claims that may be made against us. Any claims against us, regardless of their merit, could severely harm our financial condition, strain our management and other resources or destroy the prospects for commercialization of the product which is the subject of any such claim.

We may be unable to protect our patents and proprietary rights.

Our future success will depend to a significant extent on our ability to:

obtain and keep patent protection for our products and technologies on an international basis;

enforce our patents to prevent others from using our inventions;

maintain and prevent others from using our trade secrets; and

operate and commercialize products without infringing on the patents or proprietary rights of others.

We cannot assure you that our patent rights will afford any competitive advantages, and these rights may be challenged or circumvented by third parties. Further, patents may not be issued on any of our pending patent applications in the U.S. or abroad. Because of the extensive time

required for development, testing and regulatory review of a potential product, it is possible that before a potential product can be commercialized, any related patent

may expire or remain in existence for only a short period following commercialization, reducing or eliminating any advantage of the patent. If we sue others for infringing our patents, a court may determine that such patents are invalid or unenforceable. Even if the validity of our patent rights is upheld by a court, a court may not prevent the alleged infringement of our patent rights on the grounds that such activity is not covered by our patent claims.

In addition, third parties may sue us for infringing their patents. In the event of a successful claim of infringement against us, we may be required to:

pay substantial damages;

stop using our technologies and methods;

stop certain research and development efforts;

develop non-infringing products or methods; and

obtain one or more licenses from third parties.

If required, we cannot assure you that we will be able to obtain such licenses on acceptable terms, or at all. If we are sued for infringement, we could encounter substantial delays in development, manufacture and commercialization of our product candidates. Any litigation, whether to enforce our patent rights or to defend against allegations that we infringe third party rights, will be costly, time consuming, and may distract management from other important tasks.

As is commonplace in the biotechnology and pharmaceutical industry, we employ individuals who were previously employed at other biotechnology or pharmaceutical companies, including our competitors or potential competitors. To the extent our employees are involved in research areas which are similar to those areas in which they were involved at their former employers, we may be subject to claims that such employees and/or we have inadvertently or otherwise used or disclosed the alleged trade secrets or other proprietary information of the former employers. Litigation may be necessary to defend against such claims, which could result in substantial costs and be a distraction to management even if we are successful in defending such claims.

We also rely in our business on trade secrets, know-how and other proprietary information. We seek to protect this information, in part, through the use of confidentiality agreements with employees, consultants, advisors and others. Nonetheless, we cannot assure you that those agreements will provide adequate protection for our trade secrets, know-how or other proprietary information and prevent their unauthorized use or disclosure. To the extent that consultants, key employees or other third parties apply technological information independently developed by them or by others to our proposed products, disputes may arise as to the proprietary rights to such information, which may not be resolved in our favor. Most of our consultants are employed by, or have consulting agreements with, third parties and any inventions discovered by such

individuals generally will not become our property. There is a risk that other parties may breach confidentiality agreements or that our trade secrets may become known or independently discovered by competitors.

We face intense competition.

Competition in the pharmaceutical and biotechnology industries is intense. We face, and will continue to face, competition from numerous companies that currently market, or are developing, products for the treatment of the diseases and disorders we have targeted. Many of these entities have significantly greater research and development capabilities, experience in obtaining regulatory approvals and manufacturing, marketing, financial and managerial resources than we have. We also compete with universities and other research institutions in the development of products, technologies and processes, as well as the recruitment of highly qualified personnel. Our competitors may succeed in developing technologies or products that are more effective than the ones we have under development or that render our proposed products or technologies noncompetitive or obsolete. In addition, our competitors may achieve product commercialization or patent protection earlier than we will.

We are dependent upon our key collaborative relationships and license and sponsored research agreements.

As a company with limited resources, we rely significantly on the resources of third parties to conduct research and development and complete the regulatory approval process on our behalf. For example, our ability to ultimately

derive revenues from iloperidone is almost entirely dependent upon Novartis and Vanda Pharmaceuticals conducting the Phase III trials and completing the regulatory approval process and implementing the marketing program necessary to commercialize iloperidone if the product is approved by the FDA. We are similarly dependent upon Schering, our collaborator for the development and commercialization of Spheramine. Beyond our contractual rights, we cannot control the amount or timing of resources that any existing or future corporate partner devotes to product development and commercialization efforts for our product candidates. In addition, we also receive substantial government funding for our cancer immunotherapeutic programs. We cannot assure you that we will continue to receive such governmental funding. If such funds are no longer available, some of our current and future development efforts may be delayed or terminated. We depend on our ability to maintain existing collaborative relationships, to develop new collaborative relationships with third parties and to acquire or in-license additional products and technologies for the development of new product candidates. We cannot assure you that we will be able to maintain or develop new collaborative relationships, or that any such third-party products or technology will be available on acceptable terms, if at all.

Conflicts with our collaborators and strategic partners could result in strained relationships with them and impair our ability to enter into future collaborations, either of which could seriously harm our business. Our collaborators have, and may, to the extent permitted by our agreements, develop competing products, preclude us from entering into collaborations with their competitors or terminate their agreements with us prematurely. Moreover, disagreements could arise with our collaborators or strategic partners over rights to our intellectual property and our rights to share in any of the future revenues from products or technologies resulting from use of our technologies, or our activities in separate fields may conflict with other business plans of our collaborators.

We must meet payment and other obligations under our license and sponsored research agreements.

Our license agreements relating to the in-licensing of technology generally require the payment of up-front license fees and royalties based on sales with minimum annual royalties, the use of due diligence in developing and bringing products to market, the achievement of funding milestones and, in some cases, the grant of stock to the licensor. Our sponsored research agreements generally require periodic payments on an annual or quarterly basis. Our failure to meet financial or other obligations under license or sponsored research agreements in a timely manner could result in the loss of our rights to proprietary technology or our right to have the applicable university or institution conduct research and development efforts.

We may be dependent upon third parties to manufacture and market any products we successfully develop.

We currently do not have the resources or capacity to commercially manufacture or directly market any of our proposed products. Collaborative arrangements may be pursued regarding the manufacture and marketing of any products that may be successfully developed. We may be unable to enter into additional collaborative arrangements to manufacture or market any proposed products or, in lieu thereof, establish our own manufacturing operations or sales force.

Healthcare reform and restrictions on reimbursements may limit our financial returns.

Our ability or the ability of our collaborators to commercialize drug products, if any, may depend in part on the extent to which government health administration authorities, private health insurers and other organizations will reimburse consumers for the cost of these products. These third parties are increasingly challenging both the need for and the price of new drug products. Significant uncertainty exists as to the reimbursement status of newly approved therapeutics. Adequate third party reimbursement may not be available for our own or our collaborator's drug products to enable us or them to maintain price levels sufficient to realize an appropriate return on their and our investments in research and product development.

We may not be able to retain our key management and scientific personnel.

As a company with a limited number of personnel, we are highly dependent on the services of Dr. Louis R. Bucalo, our Chairman, President and Chief Executive Officer, as well as the other principal members of our management and scientific staff. The loss of one or more of such individuals could substantially impair ongoing research and

development programs and could hinder our ability to obtain corporate partners. Our success depends in large part upon our ability to attract and retain highly qualified personnel. We compete in our hiring efforts with other pharmaceutical and biotechnology companies, as well as universities and nonprofit research organizations, and we may have to pay higher salaries to attract and retain personnel.

We will need additional financing.

At June 30, 2005, we had approximately \$24.3 million of cash, cash equivalents, and marketable securities that we believe will enable us to fund our operations into the second quarter of 2006 and although the agreement with Cornell Capital Partners provides us with up to \$35,000,000 of financing, it is likely that we will need to seek additional financing to continue our product development activities, and will be required to obtain substantial funding to commercialize any products other than iloperidone or Spheramine that we may successfully develop. Other than the Standby Equity Distribution Agreement with Cornell Capital Partners, we do not have any funding commitments or arrangements. If we are unable to generate adequate revenues, enter into a corporate collaboration, complete a debt or equity offering, or otherwise obtain sufficient financing when and if needed, we may be required to reduce, defer or discontinue one or more of our product development programs.

Future sales of our common stock in the public market could decrease our stock price.

Future sales of our common stock by existing stockholders pursuant to Rule 144 under the Securities Act, pursuant to an effective registration statement or otherwise, could decrease the price of our common stock.

Our stock price has been and will likely continue to be volatile.

Our stock price has experienced substantial fluctuations and could continue to fluctuate significantly due to a number of factors, including:

variations in our anticipated or actual operating results;

sales of substantial amounts of our common stock;

announcements about us or about our competitors, including introductions of new products;

litigation and other developments relating to our patents or other proprietary rights or those of our competitors;

conditions in the pharmaceutical or biotechnology industries;

governmental regulation and legislation; and

change in securities analysts' estimates of our performance, or our failure to meet analysts' expectations.

The market price of our common stock may fluctuate in a way that is disproportionate to our operating performance.

The stock markets in general, and the American Stock Exchange and the market for pharmaceutical and biotechnological companies in particular, have experienced extreme price and volume fluctuations recently. These fluctuations often have been unrelated or disproportionate to the operating performance of these companies. These broad market and industry factors could reduce the market price of our common stock, regardless of our actual operating performance.

Cornell Capital Partners may sell shares of our common stock after we deliver a draw-down notice during the pricing period, which could cause our stock price to decline.

Cornell Capital Partners is deemed to beneficially own the shares of common stock corresponding to a particular draw-down on the date that we deliver a draw-down notice to Cornell Capital Partners, which is prior to the date the

stock is delivered to Cornell Capital Partners. Cornell Capital Partners may sell such shares any time after we deliver a draw-down notice. Accordingly, Cornell Capital Partners may sell such shares during the pricing period. Such sales may cause our stock price to decline and if so would result in a lower volume weighted average price during the pricing period, which would result in us having to issue a larger number of shares of common stock to Cornell Capital Partners in respect of the draw-down.

Sales of our shares of common stock under the Standby Equity Distribution Agreement could result in significant dilution to the existing shareholders

The issuance of shares of our common stock under the Standby Equity Distribution Agreement will dilute our existing stockholders and the issuance or even potential issuance of such shares could have a negative effect on the market price of our common stock. As a result, our net income per share could decrease in future periods, and the market price of our common stock could decline. In addition, the lower our stock price, the more shares of common stock we will have to issue under the Standby Equity Distribution Agreement to draw-down the full amount. If our stock price is lower, then our existing stockholders would experience greater dilution.

Sales of our stock under the Standby Equity Distribution Agreement could encourage short sales by third parties which could contribute to the future decline of our stock price

In many circumstances, the provisions of a Standby Equity Distribution Agreement have the potential to cause significant downward pressure on the price of our common stock. This is especially true if the shares being placed into the market exceed the market's ability to buy the increased stock. Such an event could place further downward pressure on the price of our common stock. We may request numerous draw-downs pursuant to the terms of the Standby Equity Distribution Agreement. Even if we use the Standby Equity Distribution Agreement to invest in assets that are materially beneficial to us, the opportunity exists for short sellers and others to contribute to the future decline of our stock price. If there are significant short sales of stock, the price decline that would result from this activity in turn may cause long holders of the stock to sell their shares thereby contributing to sales of stock in the market. If there is an imbalance on the sell side of the market for our common stock, the price will decline.

We may not be able to make a draw-down under the equity distribution agreement if Cornell Capital Partners holds more than 9.9% of our common stock.

Pursuant to our agreement with Cornell Capital Partners, in the event Cornell Capital Partners holds more than 9.9% of our then-outstanding common stock, we will be unable to make a draw-down under the Standby Equity Distribution Agreement. A possibility exists that Cornell Capital Partners may own more than 9.9% of our outstanding common stock at a time when we would otherwise plan to make a draw-down under the Standby Equity Distribution Agreement. In that event, if we are unable to obtain additional external funding, we could be forced to curtail or cease our operations.

We will not be able to make a draw-down under the equity distribution agreement if we would be required to issue more than 6,475,287 shares of our common stock unless we obtain stockholder approval for such issuance.

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Because we are listed on the American Stock Exchange, we will not be able to issue more than 6,475,287 shares of our common stock in the aggregate to Cornell pursuant to the Standby Equity Distribution Agreement unless we obtain stockholder approval prior to the issuance of such greater number of shares. If we want to make a draw-down under the Standby Equity Distribution Agreement but have already issued the maximum number of shares and are unable to obtain stockholder approval for such issuance in a timely fashion, we will be forced to seek an alternate financing source. In the event that we are unable to obtain financing from an alternate source, we could be forced to cease operations.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, including the sections titled Prospectus Summary, Risk Factors, Management's Discussion and Analysis of Financial Condition and Results of Operations and Business, contains forward-looking statements. Forward-looking statements convey our current expectations or forecasts of future events. All statements contained in this prospectus other than statements of historical fact are forward-looking statements. Forward-looking statements include statements regarding our future financial position, business strategy, budgets, projected costs, plans and objectives of management for future operations. The words may, continue, estimate, intend, plan, will, believe, project, expect, anticipate and similar expressions may identify forward-looking statements, but the absence of these words does not necessarily mean that a statement is not forward-looking. These forward-looking statements include, among other things, statements about:

the progress, timing and completion of research, development and clinical trials for our drug candidates;

the time and costs involved in obtaining regulatory approvals of our drug candidates and any limitations imposed by regulatory authorities;

our ability to establish, maintain and enforce collaborative arrangements and other agreements to develop and commercialize drug candidates;

our ability to establish and protect intellectual property rights in our drug candidates without infringing on the intellectual property rights of others, including the costs involved in filing and prosecuting patent applications and enforcing or defending patent claims and potential drug candidates;

our ability to hire and retain the employees necessary to staff our development programs;

our use of the net proceeds from the sale of common stock under the Standby Equity Distribution Agreement;
and

our estimates of future performance.

Any or all of our forward-looking statements in this prospectus may turn out to be inaccurate. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our financial condition, results of operations, business strategy and financial needs. They may be affected by inaccurate assumptions we might make or by known or unknown risks and uncertainties, including the risks, uncertainties and assumptions described in Risk Factors. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this prospectus may not occur as contemplated, and

actual results could differ materially from those anticipated or implied by the forward-looking statements.

USE OF PROCEEDS

This prospectus relates to shares of our common stock that may be offered and sold from time to time by certain selling stockholders. There will be no proceeds to us from the sale of shares of common stock in this offering. We will, however, receive the proceeds from the sale of shares of common stock to Cornell Capital Partners under the Standby Equity Distribution Agreement. The purchase price of the shares purchased under the Standby Equity Distribution Agreement will be equal to the lowest daily volume weighted average price of our common stock during the five consecutive trading day period immediately following the date we notify Cornell Capital Partners that we desire to make a draw-down under the Standby Equity Distribution Agreement. We will pay a fee equal to 5% of each draw-down to Cornell Capital Partners and \$500 for each draw-down to Yorkville Advisors Management as an additional fee.

Pursuant to the Standby Equity Distribution Agreement, the amount of each draw-down is subject to a maximum amount of \$2 million, and we may not submit any request for a draw-down within five trading days of a prior request, or request more than \$35 million over 24 months from the date of this prospectus. We may not request draw-downs if the shares to be issued in connection with such draw-downs would result in Cornell Capital Partners owning more than 9.9% of our outstanding common stock.

For illustrative purposes only, we have set forth below our intended use of proceeds assuming receipt of the maximum amount of net proceeds available under the Standby Equity Distribution Agreement. The table assumes estimated offering expenses of \$125,000, plus the 5% fee payable to Cornell Capital Partners under the Standby Equity Distribution Agreement and the \$10,000 fee paid to Yorkville Advisors Management. The figures below are estimates only, and may be changed due to various factors, including the timing of the receipt of the proceeds.

| | | |
|--|----|------------|
| Gross Proceeds | \$ | 35,000,000 |
| Net Proceeds | \$ | 33,115,000 |
| Number of shares issued under the Standby Equity Distribution Agreement at an assumed offering price of \$1.61 | | 21,739,130 |
| Use of Proceeds: | | |
| General Working Capital | \$ | 33,115,000 |

The Standby Equity Distribution Agreement limits our use of proceeds to general corporate purposes. However, we cannot use the net proceeds from this offering for the payment (or loan to any such person for the payment) of any judgment, or other liability, incurred by any executive officer, officer, director or employee of ours, except for any liability owed to such person for services rendered, or if any judgment or other liability is incurred by such person originating from services rendered to us, or we have indemnified such person from liability.

STANDBY EQUITY DISTRIBUTION AGREEMENT

Overview

On September 28, 2005, we entered into a Standby Equity Distribution Agreement with Cornell Capital Partners. Pursuant to the Standby Equity Distribution Agreement, we may, at our discretion, periodically sell to Cornell Capital Partners shares of common stock for a total purchase price of up to \$35 million. For each share of common stock purchased under the Standby Equity Distribution Agreement, Cornell Capital Partners will pay us the lowest daily volume weighted average price of our common stock during the five consecutive trading day period

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immediately following the date we notify Cornell Capital Partners that we desire to access the Standby Equity Distribution Agreement. The number of shares purchased by Cornell Capital Partners for each draw-down is determined by dividing the amount of each draw-down by the purchase price for the shares of common stock. Further, Cornell Capital Partners will retain 5% of each draw-down under the Standby Equity Distribution Agreement and we will pay \$500 for each draw-down to Yorkville Advisors Management as an additional fee. Cornell Capital Partners is a private limited partnership whose business operations are conducted through its general partner, Yorkville Advisors Management, LLC. The sale of the shares under the Standby Equity Distribution Agreement is conditioned upon us registering the shares of common stock with the Securities and Exchange

Commission. We will bear the costs associated with this registration. There are no other significant closing conditions to draws under the equity line, except as specified below.

Standby Equity Distribution Agreement Explained

Pursuant to the Standby Equity Distribution Agreement, we may periodically sell shares of common stock to Cornell Capital Partners to raise capital to fund our working capital needs. The periodic sale of shares is known as a draw-down. We may request a draw-down every five trading days. A closing will be held six trading days after such written notice at which time we will deliver shares of common stock and Cornell Capital Partners will pay the draw-down amount. We may request draw-downs under the Standby Equity Distribution Agreement once the underlying shares are registered with the SEC. Thereafter, we may continue to request draw-downs until Cornell Capital Partners has advanced us a total amount of \$35 million or 24 months after the date of this prospectus, whichever occurs first.

The amount of each draw-down is subject to a maximum amount of \$2 million, and we may not submit a request for a draw-down within five trading days of a prior request. The amount available under the Standby Equity Distribution Agreement is not dependent on the price or volume of our common stock. We may not request draw-downs if the shares to be issued in connection with such draw-downs would result in Cornell Capital Partners owning more than 9.9% of our outstanding common stock. If Cornell Capital Partners owns more than 9.9% of our outstanding common stock at a time when we would otherwise plan to take a draw-down under the Standby Equity Distribution Agreement, we would not be able to make such draw-down.

We do not have any agreements with Cornell Capital Partners regarding the holding or distribution of such stock.

We cannot predict the actual number of shares of common stock that will be issued pursuant to the Standby Equity Distribution Agreement in part because the purchase price of the shares will fluctuate based on prevailing market conditions and we have not determined the total amount of draw-downs we intend to make. Nonetheless, we can estimate the number of shares of our common stock that will be issued using certain assumptions. Assuming we issued the number of shares of common stock being registered in the accompanying registration statement at the closing price on October 6, 2005 (\$1.61 per share) we would issue 21,739,130 shares of common stock to Cornell Capital Partners for gross proceeds of \$35,000,000. We previously paid a commitment fee of 75,407 shares of our common stock to Cornell Capital Partners and a placement agent fee of 5,386 shares of common stock to Monitor Capital, Inc. Assuming the price at which we drew-down the Standby Equity Line of Credit was \$1.61, we would have issued 66.9% of our outstanding common stock as of October 6, 2005.

There is an inverse relationship between our stock price and the number of shares to be issued under the Standby Equity Distribution Agreement. That is, as our stock price declines, we would be required to issue a greater number of shares under the Standby Equity Distribution Agreement for a given draw-down. This inverse relationship is demonstrated by the following tables, which show the net cash to be received by us and the number of shares to be issued under the Standby Equity Distribution Agreement at a price of \$1.61 per share (the closing price on October 6, 2005) and 25%, 50% and 75% discounts that price.

| | Market Price: \$1.61 | Market Price: \$1.21 | Market Price: \$0.81 | Market Price: \$0.40 |
|--------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| No. of Shares (1): | 21,739,130 | 28,925,620 | 43,209,877 | 87,500,000 |
| Total Outstanding (2): | 54,212,558 | 61,399,048 | 75,683,305 | 119,973,428 |
| Percent Outstanding (3): | 66.9% | 89.1% | 133.1% | 269.5% |

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| | | | | | | | | |
|-------------------------|----|------------|----|------------|----|------------|----|------------|
| Net Cash to Access (4): | \$ | 33,115,000 | \$ | 33,115,000 | \$ | 33,115,000 | \$ | 33,115,000 |
|-------------------------|----|------------|----|------------|----|------------|----|------------|

(1) Represents the number of shares of common stock which could be issued to Cornell Capital Partners under the Standby Equity Distribution Agreement at the prices set forth in the table.

(2) Represents the total number of shares of common stock outstanding after the issuance of the shares to Cornell Capital Partners under the Standby Equity Distribution Agreement, including the 75,407 shares issued to Cornell Capital Partners as a commitment fee and the 5,386 shares issued to Monitor Capital, Inc., as a placement agent fee.

- (3) Represents the shares of common stock to be issued as a percentage of the total number shares outstanding as of October 6, 2005.
- (4) Net cash equals the gross proceeds minus the 5% fee to be paid to Cornell Capital Partners, the \$10,000 fee paid to Yorkville Advisors Management and approximately \$125,000 in offering expenses.

Proceeds used under the Standby Equity Distribution Agreement will be used in the manner set forth in the "Use of Proceeds" section of this prospectus. We cannot predict the total amount of proceeds to be raised in this transaction because we have not determined the total amount of the draw-downs we intend to make. Cornell Capital Partners has the ability to permanently terminate its obligation to purchase shares of common stock from us under the Standby Equity Distribution Agreement if there shall occur any stop order or suspension of the effectiveness of the registration statement for an aggregate of 50 trading days other than due to acts by Cornell Capital Partners or if we fail materially to comply with certain terms of the Standby Equity Distribution Agreement, which failure remains uncured for 30 days after notice from Cornell Capital Partners.

All fees and expenses under the Standby Equity Distribution Agreement will be borne by us. We expect to incur expenses of approximately \$125,000 in connection with this registration, consisting primarily of professional fees.

We paid Cornell Capital Partners a one-time commitment fee equal to \$140,000 in the form of 75,407 shares of common stock and paid Yorkville Advisors Management a structuring fee of \$10,000, all of which are underwriting discounts payable or paid to Cornell Capital Partners.

We engaged Monitor Capital, Inc., a registered broker-dealer, to act as placement agent in connection with the Standby Equity Distribution Agreement. We paid Monitor Capital, Inc. a fee of \$10,000 in the form of 5,386 shares of our common stock as of September 28, 2005, under a Placement Agent Agreement.

SELLING STOCKHOLDERS

The following table presents information regarding the selling stockholders. The selling stockholders assisted in or provided financing to us.

| Selling Stockholder | Shares Beneficially Owned Before Offering | Percentage of Outstanding Shares Beneficially Owned Before Offering (1) | Shares to be Acquired under the Standby Equity Distribution Agreement | Percentage of Outstanding Shares Beneficially Owned Assuming Acquisition of All Shares Acquired Under Standby Equity Distribution Agreement (1) | Shares to be Sold in the Offering | Percentage of Outstanding Shares Beneficially Owned After the Offering (1) |
|------------------------------|---|---|---|---|-----------------------------------|--|
| Cornell Capital Partners, LP | 75,407 | * | 21,739,130 | 40.23% | 21,814,537 | |
| Monitor Capital, Inc. | 5,386 | * | | * | 5,386 | |

* Less than 1%.

(1) Applicable percentage of ownership is based on 32,473,428 shares of common stock outstanding as of October 6, 2005, together with securities exercisable for or convertible into shares of common stock within 60 days of October 6, 2005, for each stockholder. Beneficial ownership is determined in accordance with Rule 13d-3(d) promulgated by the SEC under the Securities Exchange Act of 1934, as amended. Each person or group identified possesses sole voting and investment power with respect to the shares. Shares not outstanding but deemed beneficially owned by virtue of the right of a person to acquire them within 60 days are treated as outstanding only for purposes of determining the number of and percent owned by such person.

Shares Acquired In Financing Transactions

The following information contains a description of each selling stockholder's relationship to us, and how each selling stockholder acquired the shares to be sold in this offering is detailed below. Neither of the selling stockholders have held a position or office, or had any other material relationship, with us, except as follows:

Cornell Capital Partners

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Cornell Capital Partners is the investor under the Standby Equity Distribution Agreement and a holder of shares of our common stock. Yorkville Advisors Management, LLC, the general partner of Cornell Capital Partners controls and makes all investment decisions for Cornell Capital Partners. Mark Angelo, the managing member of Yorkville Advisors Management, makes the investment decisions on behalf of and controls Yorkville Advisors Management. All the shares being registered for Cornell Capital Partners under this registration statement have been issued or are issuable to Cornell Capital Partners pursuant to the Standby Equity Distribution Agreement which we entered into on September 28, 2005. Pursuant to the Standby Equity Distribution Agreement, we may, at our discretion, periodically sell to Cornell Capital Partners shares of common stock for a total purchase price of up to \$35 million. For each share of common stock purchased under the Standby Equity Distribution Agreement, Cornell Capital Partners will pay us the lowest daily volume weighted average price of our common stock during the five consecutive trading day period immediately following the date we notify Cornell Capital Partners that we desire to access the Standby

Equity Distribution Agreement. Further, Cornell Capital Partners will retain 5% of each draw-down under the Standby Equity Distribution Agreement and we will pay \$500 for each draw-down to Yorkville Advisors Management as an additional fee. We paid Cornell Capital Partners a one-time commitment fee equal to \$140,000 in the form of 75,407 shares of common stock and paid Yorkville Advisors Management a structuring fee of \$10,000 in connection with the Standby Equity Distribution Agreement.

Monitor Capital, Inc.

We engaged Monitor Capital, Inc., a registered broker-dealer, to act as placement agent in connection with the Standby Equity Distribution Agreement. We paid Monitor Capital, Inc. a fee of \$10,000 in the form of 5,386 shares of common stock on September 28, 2005, under a Placement Agent Agreement. Each of Hsiao-wen Kao, Monitor Capital, Inc.'s President and Chief Executive Officer, and John Dickerson, Monitor Capital, Inc.'s majority stockholder, individually, make investment decisions for Monitor Capital, Inc.

PLAN OF DISTRIBUTION

The selling stockholders have advised us that the sale or distribution of our common stock owned by the selling stockholders may be effected directly to purchasers by the selling stockholders as principals or through one or more underwriters, brokers, dealers or agents from time to time in one or more transactions (which may involve crosses or block transactions) (i) on the American Stock Exchange or in any other market on which the price of our shares of common stock are quoted or (ii) in transactions otherwise than on the American Stock Exchange or in any other market on which the price of our shares of common stock are quoted. Any of such transactions may be effected at market prices prevailing at the time of sale, at prices related to such prevailing market prices, at varying prices determined at the time of sale or at negotiated or fixed prices, in each case as determined by the selling stockholders or by agreement between the selling stockholders and underwriters, brokers, dealers or agents, or purchasers. If the selling stockholders effect such transactions by selling their shares of common stock to or through underwriters, brokers, dealers or agents, such underwriters, brokers, dealers or agents may receive compensation in the form of discounts, concessions or commissions from the selling stockholders or commissions from purchasers of common stock for whom they may act as agent (which discounts, concessions or commissions as to particular underwriters, brokers, dealers or agents may be in excess of those customary in the types of transactions involved).

Cornell Capital Partners is an underwriter within the meaning of the Securities Act of 1933 in connection with the sale of common stock under the Standby Equity Distribution Agreement. Cornell Capital Partners will pay us the lowest daily volume weighted average price of our common stock during the five consecutive trading day period immediately following the date we notify Cornell Capital Partners that we desire to access the Standby Equity Distribution Agreement. In addition, Cornell Capital Partners will retain 5% of each draw-down under the Standby Equity Distribution Agreement and we are required to pay Yorkville Advisors Management, LLC, the investment manager for Cornell Capital Partners, a \$500 for each draw-down. We paid Cornell Capital Partners a one-time commitment fee equal to \$140,000 in the form of 75,407 shares of common stock and paid Yorkville Advisors Management a structuring fee of \$10,000, all of which are underwriting discounts payable or paid to Cornell Capital Partners.

The following table shows the discount that Cornell Capital Partners will receive in connection with our draw-down in full of the Standby Equity Distribution Agreement, assuming a market price of \$1.61 (the closing price of the common stock on October 6, 2005) and the issuance of 21,739,130 shares of our common stock.

| | Per share | | Total | |
|---|-----------|------|-------|------------|
| Market price | \$ | 1.61 | \$ | 35,000,000 |
| Discount (5% and \$10,000 fee to Yorkville Advisors Management) (1) | \$ | 1.53 | \$ | 1,760,000 |
| Proceeds before expenses | \$ | 1.52 | \$ | 33,240,000 |

(1) Does not include the \$500 per draw-down fee to be paid to Yorkville Advisors Management.

In addition, we engaged Monitor Capital, Inc., a registered broker-dealer, to act as placement agent in connection with the Standby Equity Distribution Agreement. We paid Monitor Capital, Inc. a fee of \$10,000 in the form of 5,386 shares of our common stock on September 28, 2005 pursuant to a Placement Agent Agreement.

Cornell Capital Partners was formed in February 2000 as a Delaware limited partnership. Cornell Capital Partners is a domestic hedge fund in the business of investing in and financing public companies. Cornell Capital Partners does not intend to make a market in our stock or to otherwise engage in stabilizing or other transactions intended to help support the stock price. Prospective investors should take these factors into

consideration before purchasing our common stock.

Under the securities laws of certain states, the shares of common stock may be sold in such states only through registered or licensed brokers or dealers. The selling stockholders are advised to ensure that any underwriters, brokers, dealers or agents effecting transactions on behalf of the selling stockholders are registered to sell securities in all fifty states. In addition, in certain states the shares of common stock may not be sold unless the shares have been registered or qualified for sale in such state or an exemption from registration or qualification is available and is complied with.

We will pay all the expenses incident to the registration, offering and sale of the shares of common stock to the public hereunder other than commissions, fees and discounts of underwriters, brokers, dealers and agents. If any of these other expenses exists, we expect the selling stockholders to pay these expenses. We have agreed to indemnify Cornell Capital Partners and its controlling persons against certain liabilities. We estimate that the expenses of the offering to be borne by us will be approximately \$125,000.

The selling stockholders are subject to applicable provisions of the Securities Exchange Act of 1934, as amended, and its regulations, including Regulation M. Under Regulation M, the selling stockholders or their agents may not bid for, purchase, or attempt to induce any person to bid for or purchase, shares of our common stock while such selling stockholders are distributing shares covered by this prospectus. Pursuant to the requirements of Item 512 of Regulation S-K and as stated in Part II of this Registration Statement, we must file a post-effective amendment to the accompanying Registration Statement once informed of a material change from the information set forth with respect to the Plan of Distribution.

Pursuant to our agreement with Cornell Capital Partners, in the event Cornell Capital Partners holds more than 9.9% of our then-outstanding common stock, we will be unable to make a draw-down under the Standby Equity Distribution Agreement. A possibility exists that Cornell Capital Partners may own more than 9.9% of our outstanding common stock at a time when we would otherwise plan to make a draw-down under the Standby Equity Distribution Agreement

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

Overview

We are a biopharmaceutical company developing proprietary therapeutics for the treatment of central nervous system (CNS) disorders, cardiovascular disease, bone disease and other disorders. Our product development programs focus primarily on large pharmaceutical markets with significant unmet medical needs and commercial potential. We are focused primarily on clinical development of the following products:

Probuphine: for the treatment of opioid dependence and chronic pain

Iloperidone: for the treatment of schizophrenia and related psychotic disorders (partnered with Vanda Pharmaceuticals, Inc.)

Spheramine: for the treatment of advanced Parkinson's disease (partnered with Schering AG)

DITPA: for the treatment of congestive heart failure and hyperlipidemia

Gallium maltolate: for the treatment of cancer, bone related diseases and chronic bacterial infections

We were incorporated in Delaware in February 1992 and have funded our operations through various sources, including an initial public offering in January 1996 and private placements of securities, as well as proceeds from warrant and option exercises, corporate licensing and collaborative agreements, and government-sponsored research grants.

Results of Operations

Three and Six Months Ended June 30, 2005 Compared to Three and Six Months Ended June 30, 2004

Our net loss for the three months ended June 30, 2005 was approximately \$5.7 million, or \$0.18 per share, compared to approximately \$5.6 million, or \$0.17 per share, for the comparable period in 2004. For the six months ended June 30, 2005, our net loss was approximately \$12.0

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million, or \$0.37 per share, compared to approximately \$11.9 million, or \$0.39 per share, for the comparable period in 2004.

We had revenues from licensing agreements of approximately \$13,000 during the three month periods ended June 30, 2005 and no revenue during the comparable three month period of 2004. During the six months ended June 30, 2005 and 2004, we had revenues of approximately \$27,000 and \$1,000, respectively.

Research and development expenses for the three months ended June 30, 2005 were approximately \$4.5 million, compared to approximately \$4.6 million for the comparable period in 2004, a decrease of \$0.1 million, or 2%. Research and development expenses for the six months ended June 30, 2005 were approximately \$9.7 million, compared to approximately \$9.7 million for the comparable period in 2004. External research and development expenses include direct expenses such as clinical research organization charges, investigator and review board fees, patient expense reimbursements, pre-clinical activities and contract manufacturing expenses. In the second quarter 2005, our external research and development expenses relating to our core product development programs were approximately: \$1.2 million related to Probuphine, \$1.4 million related to DITPA, and \$568,000 related to gallium maltolate. Other research and development expenses include internal operating costs such as clinical research and development personnel-related expenses, clinical trials related travel expenses, and allocation of facility and corporate costs. As a result of the risks and uncertainties inherently associated with pharmaceutical research and development activities described elsewhere in this report, 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 for the three months ended June 30, 2005 were approximately \$1.3 million, compared to approximately \$1.1 million for the comparable period in 2004, an increase of \$0.2 million, or 18%. General and administrative expenses for the six months ended June 30, 2005 were approximately \$2.6 million, compared to approximately \$2.5 million for the comparable period in 2004, an increase of \$0.1 million, or 4%. The increase in general and administrative expenses during the three months ended June 30, 2005 was primarily related to an increase in personnel related costs and other general and administrative costs, including professional fees.

Net other income for the three months ended June 30, 2005 was approximately \$106,000, compared to net other income of approximately \$161,000 in the comparable period in 2004. Net other income for the six months ended June 30, 2005 was approximately \$257,000, compared to net other income of approximately \$260,000 in the comparable period in 2004. The decrease, primarily in interest income, was a result of lower balances of cash and marketable securities.

Year Ended December 31, 2004 Compared to Year Ended December 31, 2003

Revenues in 2004 were \$31,000 compared to \$89,000 for 2003, a decrease of \$58,000. Our revenues during 2004 and 2003 were derived from fees received under various licensing agreements.

Research and development expenses for 2004 were \$20.4 million compared to \$22.3 million for 2003, a decrease of \$1.9 million. The decrease in research and development was primarily associated with the pending completion of a Phase II clinical study and the reduction of internal resources to our immunotherapy products in 2004. Of our 2004 research and development expenses, approximately 44%, or \$9.0 million, were attributable to external R&D expenses. External R&D expenses include direct expenses such as clinical research organization charges, investigator and review board fees, patient expense reimbursements, pre-clinical activities and contract manufacturing expenses. In 2004, approximately \$3.9 million of external R&D expenses were related to Pivanex, \$1.4 million to Probuphine, \$1.3 million to gallium maltolate, \$1.2 million to DITPA, \$0.2 million to Spheramine, and the remainder to other projects.

Remaining R&D expenses were attributable to internal operating costs, which include clinical research and development personnel salaries and employment related expenses, clinical trials related travel expenses, and allocation of facility and corporate costs. In 2004, we recorded a \$759,000 acquired research and development expense in connection with the acquisition of minority shares of ProNeura, Inc. The entire purchase price of the shares was charged to acquired research and development on the acquisition date in accordance with generally accepted accounting principles. As a result of the risks and uncertainties inherently associated with pharmaceutical research and development activities described elsewhere in this report, 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 for 2004 were \$5.2 million compared to \$5.1 million for 2003.

Other income, net, for 2004 was \$376,000 compared to \$1.3 million for 2003, a decrease of \$900,000. The decrease, primarily in interest income, was a result of declining interest rates and our smaller average cash and marketable securities position.

As a result of the foregoing, we had a net loss of \$26.0 million in 2004 compared to a net loss of \$29.9 million in 2003.

Year Ended December 31, 2003 Compared to Year Ended December 31, 2002

Revenues in 2003 were \$0.1 million compared to \$2.9 million for 2002, a decrease of \$2.8 million. Our 2002 revenue included a one-time \$2 million milestone payment from Schering AG following successful completion of our Phase I/II clinical study of Spheramine in the treatment of Parkinson's disease and Schering's decision to initiate randomized clinical testing of Spheramine for the treatment of patients with advanced Parkinson's disease. In addition, our 2002 revenue also included SBIR grant revenues from the National Institutes of Health in support of the development of Spheramine. We had no comparable milestone or grant revenue in 2003.

Research and development expenses for 2003 were \$22.3 million compared to \$29.8 million for 2002, a decrease of \$7.5 million. The decrease in research and development was primarily associated with the completion of a randomized, placebo-controlled Phase III clinical study in 2002. Of our 2003 research and development expenses, approximately 52%, or \$11.7 million, were attributable to external R&D expenses. External R&D expenses include direct expenses such as clinical research organization charges, investigator and review board fees, patient expense reimbursements, pre-clinical activities and contract manufacturing expenses. In 2003, approximately \$5.2 million of external R&D expenses were related to Pivanex, \$1.2 million to Probuphine, \$1.3 million to gallium maltolate, \$0.6 million to Spheramine, and the remainder to other projects. Remaining R&D expenses were attributable to internal operating costs, which include clinical research and development personnel salaries and employment related expenses, clinical trials related travel expenses, and allocation of facility and corporate costs. In 2003, we recorded a \$3.9 million acquired research and development expense in connection with the acquisition of DITPA, a novel product for the potential treatment of congestive heart failure. The entire purchase price was charged to acquired research and development on the acquisition date in accordance with generally accepted accounting principles.

General and administrative expenses for 2003 were \$5.1 million compared to \$5.1 million for 2002.

Other income, net, for 2003 was \$1.3 million compared to \$3.8 million for 2002, a decrease of \$2.5 million. The decrease, primarily in interest income, was a result of declining interest rates and our smaller average cash and marketable securities position.

As a result of the foregoing, we had a net loss of \$29.9 million in 2003 compared to a net loss of \$28.2 million in 2002.

Liquidity And Capital Resources

We have funded our operations since inception primarily through sales of our securities, as well as proceeds from warrant and option exercises, corporate licensing and collaborative agreements, and government sponsored research

grants. At June 30, 2005, we had \$24.3 million of cash, cash equivalents, and marketable securities compared to \$36.3 million at December 31, 2004.

Our operating activities used \$12.0 million during the six months ended June 30, 2005. This consisted primarily of the net loss for the period of \$12.0 million offset in part by non-cash charges of \$0.2 million related to depreciation and amortization expenses and \$0.2 million related to changes in prepaid expenses, receivables, other assets, accounts payable and other accrued liabilities. Uses of cash in operating activities were primarily to fund product development programs and administrative expenses. We have entered into various agreements with research institutions, universities, and other entities for the performance of research and development activities and for the acquisition of licenses related to those activities. Certain of the licenses require us to pay royalties on future product sales, if any. In addition, in order to maintain license and other rights while products are under development, we must comply with customary licensee obligations, including the payment of patent related costs, annual minimum license fees, meeting project-funding milestones and diligent efforts in product development. The aggregate commitments we have under these agreements, including minimum license payments, for the next 12 months is approximately \$0.3 million.

Net cash provided by investing activities of \$11.7 million during the six months ended June 30, 2005 consisted of sales and maturities of marketable securities of \$16.9 million, partially offset by purchases of marketable securities of \$4.9 million and capital expenditures of \$0.2 million.

Net cash provided by financing activities during the six months ended June 30, 2005 was \$82,000, which consisted primarily of net proceeds from the exercise of stock options.

On September 30, 2005, we reduced our workforce by 10 employees in order to reduce our operating expenses. We expect to save approximately \$300,000 per quarter in payroll expenses due to the reduction.

On September 28, 2005, we entered into a Standby Equity Distribution Agreement with Cornell Capital Partners. Under the agreement, we can require Cornell to purchase up to \$35,000,000 of our common stock over a two year period following the effective date of a registration statement covering the shares of the common stock to be sold to Cornell Capital Partners. We can make draw-downs under the agreement in \$2,000,000 increments. At the closing of each draw-down (which will take place six days after our notification to Cornell Capital Partners) we will issue to Cornell Capital Partners a number of shares of our common stock equal to the amount of the draw-down divided by the lowest daily volume weighted average price of our common stock during the five trading days following the draw-down notice to Cornell Capital Partners. At each closing, we will pay 5% of the amount of the draw-down to Cornell Capital Partners and \$500 to Yorkville Associates Management, the investment advisor to Cornell Capital Partners. We are not obligated to make any draw-downs under the agreement, and will not pay any additional fees to Cornell Capital Partners if we do not do so.

In February 2004 we filed a shelf registration statement with the Securities and Exchange Commission to sell up to \$50 million of common or preferred stock. Under this registration statement, shares may be sold periodically to provide additional funds for our operations. In March 2004, we completed a sale of 3,075,000 shares of our common stock offered under the registration statement at a price of \$5.00 per share, for gross proceeds of approximately \$15.4 million. Net proceeds were approximately \$14.4 million.

We expect to continue to incur substantial additional operating losses from costs related to continuation and expansion of product and technology development, clinical trials, and administrative activities. We believe that we currently have sufficient working capital to sustain our planned operations into the second quarter of 2006.

Although the agreement with Cornell Capital Partners provides us with up to \$35,000,000 of financing and the workforce reduction described above will save us approximately \$300,000 per quarter, we continue to seek alternative financing sources and in the future we will need to seek additional financing to continue our product development activities, and will be required to obtain substantial funding to commercialize any products other than iloperidone or Spheramine that we may successfully develop. In the future, if we are unable to complete a debt or equity offering, or otherwise obtain sufficient financing when and if needed, we may be required to reduce, defer or discontinue one or more of our product development programs.

Critical Accounting Policies and Estimates

The preparation of our financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the amounts reported in our financial statements and accompanying notes. Actual results could differ materially from those estimates. We believe the following accounting policies and estimates for the year ended December 31, 2004, to be critical:

We have elected to continue to follow Accounting Principles Board Opinion No. 25 (or APB 25), *Accounting for Stock Issued to Employees*, to account for employee stock options because the alternative fair value method of accounting prescribed by Statement of Financial Accounting Standards No. 123 (or SFAS 123), *Accounting for Stock-Based Compensation*, requires the use of option valuation models that were not developed for use in valuing employee stock options. Under APB 25, no compensation expense is recognized when the exercise price of our employee stock options equals the market price of the underlying stock on the date of grant. Had we elected to follow SFAS 123 and to apply the fair value method to stock-based employee compensation, we would have recorded an additional \$1.1 million in net loss, or an additional \$0.03 of net loss per share for the year ended December 31, 2004.

Contractual Obligations and Commitments

The following table sets forth the aggregate contractual cash obligations as of June 30, 2005 (in thousands):

| Contractual obligations | Total | Payments Due by Period | | | |
|---|----------|------------------------|-----------|-----------|----------|
| | | < 1 year | 1-3 years | 3-5 years | 5 years+ |
| Operating leases | \$ 3,206 | \$ 805 | \$ 1,235 | \$ 1,166 | \$ |
| Sponsored research & license agreements | \$ 1,326 | \$ 332 | \$ 438 | \$ 370 | \$ 186 |
| Total contractual cash obligations | \$ 4,532 | \$ 1,137 | \$ 1,673 | \$ 1,536 | \$ 186 |

BUSINESS

Overview

We are a biopharmaceutical company developing proprietary therapeutics for the treatment of central nervous system (CNS) disorders, cardiovascular disease, bone disease and other disorders. Our product development programs focus primarily on large pharmaceutical markets with significant unmet medical needs and commercial potential. We are focused primarily on clinical development of the following products:

Probuphine: for the treatment of opioid dependence and chronic pain

Iloperidone: for the treatment of schizophrenia and related psychotic disorders (partnered with Vanda Pharmaceuticals, Inc.)

Spheramine: for the treatment of advanced Parkinson's disease (partnered with Schering AG)

DITPA: for the treatment of congestive heart failure and hyperlipidemia

Gallium maltolate: for the treatment of cancer, bone related diseases and chronic bacterial infections

We are directly developing our product candidates and also utilizing strategic partnerships. These partnerships help fund product development and enable us to retain significant economic interest in our products. In June 2004, we announced that Vanda Pharmaceuticals, Inc. (Vanda) had acquired from Novartis Pharma AG (Novartis) the worldwide rights to develop and commercialize iloperidone, our proprietary antipsychotic agent in Phase III clinical development for the treatment of schizophrenia and related psychotic disorders. Vanda will now pursue advancement of the iloperidone Phase III development program. All of our rights and economic interests in iloperidone, including royalties on sales of iloperidone, remain essentially unchanged under the agreement. Spheramine development is primarily funded by our corporate partner for Spheramine, Schering AG, Germany (Schering) under an agreement in which Schering received exclusive, worldwide development, manufacturing and commercialization rights, and, in addition to clinical and manufacturing development funding and milestone payments, Schering will pay us a royalty on future product sales.

We were incorporated in Delaware in February 1992 and have funded our operations through various sources, including an initial public offering in January 1996 and private placements of securities, as well as proceeds from warrant and option exercises, corporate licensing and collaborative agreements, and government-sponsored research grants.

Financial Information about Industry Segments

We operate in only one business segment, the development of pharmaceutical products.

Product Development Programs

The following table provides summary status of our products in development:

| Product | Potential Indication(s) | Phase of Development | Marketing Rights |
|-------------------|---|-----------------------------|-----------------------------|
| Probuphine | Opioid dependence | Initiating Phase III | Titan |
| Probuphine | Chronic pain | Initiating Phase II | Titan |
| Iloperidone | Schizophrenia, psychosis | Phase III | Vanda Pharmaceuticals, Inc. |
| Spheramine | Parkinson's disease | Phase IIb | Schering AG |
| DITPA | Congestive heart failure, hyperlipidemia | Phase II | Titan |
| Gallium maltolate | Cancer, bone related disease and chronic bacterial infections | Phase I | Titan |

Our products are at various stages of development and may not be successfully developed or commercialized. We do not currently have any products being commercially sold. Our proposed products will require significant further capital expenditures, development, testing, and regulatory clearances prior to commercialization. We may experience unanticipated problems relating to product development and cannot predict whether we will successfully develop and commercialize any products.

Probuphine

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We are developing Probuphine for the treatment of opioid dependence and chronic pain. Probuphine is the first product to utilize our novel, proprietary ProNeura long-term drug delivery technology (See ProNeura Continuous Drug Delivery Technology below). Probuphine is designed to provide six months of steady state therapeutic levels of buprenorphine, an approved agent for the treatment of opioid dependence and pain.

In June 2002, we presented data at the International Conference on Pain and Chemical Dependency in New York demonstrating that Probuphine continuously delivered buprenorphine for one year in preclinical studies. In June 2004, we announced final results from a pilot clinical study that evaluated the safety, pharmacokinetics and preliminary efficacy of Probuphine in the treatment of opioid-dependent patients. The results were presented at the Annual Meeting of The International Society of Addiction Medicine in Helsinki, and demonstrated that all 12 patients switched from daily sublingual buprenorphine therapy to Probuphine, had maintenance of therapeutic benefit for a period of six months following a single treatment of Probuphine. Treatment with Probuphine was well tolerated in this pilot study, with no significant adverse events.

We are currently in the process of finalizing a clinical development plan with regulatory authorities in various countries to commence Phase III clinical testing potentially leading to product approval. We expect to initiate

clinical testing in the treatment of opioid dependence in the near future. We also plan to initiate Phase II clinical testing of Probuphine in chronic pain in late 2005.

Iloperidone

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Iloperidone is our novel, proprietary product in development for the treatment of schizophrenia and related psychotic disorders. Iloperidone has been evaluated in an extensive Phase III program comprising over 3,500 patients at more than 200 sites in 24 countries, administered and funded by Novartis Pharma AG. In three completed efficacy studies, iloperidone statistically significantly reduced the symptoms of schizophrenia compared to placebo. Iloperidone has also been investigated in three 12-month safety studies, which confirm safety and tolerability. Additionally, Novartis has completed a study in elderly patients with good results. Although iloperidone was considered safe in the above efficacy studies, it has shown a dose dependent increase in the QTc interval.

The results of a study evaluating the potential effect of iloperidone on the EKG profile (QTc interval prolongation) of patients receiving the drug were announced in July 2002. The study indicated that there was a dose dependent increase in QTc interval and results for iloperidone were roughly comparable to that for ziprasidone, one of the currently marketed agents in the study. The FDA has concurred with this assessment and has indicated that one additional successful pivotal Phase III study is necessary to complete the efficacy data package prior to NDA submission. The QTc profile may potentially limit the opportunity of iloperidone as first line therapy for schizophrenia.

In June 2004, we announced that Vanda Pharmaceuticals, Inc. acquired from Novartis Pharma AG the worldwide rights to develop and commercialize iloperidone. Vanda was founded by Dr. Argeris N. Karabelas, former CEO of Novartis Pharmaceuticals, and Dr. Mihael Polymeropoulos, former Vice President of Pharmacogenetics at Novartis Pharmaceuticals. Under its agreement with Novartis, Vanda is now pursuing advancement of the iloperidone Phase III development program and is expected to initiate further Phase III clinical testing of iloperidone by the end of 2005. All of our rights and economic interests in iloperidone, including royalties on sales of iloperidone, remain essentially unchanged under the agreement.

Spheramine

Spheramine is a cell-based therapeutic being developed for potential treatment of advanced Parkinson's disease. It utilizes our proprietary cell-coated microcarrier (CCM) technology, which enables the development of cell-based therapies for minimally-invasive, site-specific delivery to the central nervous system of therapeutic factors precisely where they are needed.

Spheramine consists of microcarriers coated with human retinal pigment epithelial cells that directly enhance brain levels of dopamine, a neurotransmitter deficient in certain brain regions in Parkinson's disease, leading to movement disorders. Preclinical studies have demonstrated the preliminary efficacy and safety of Spheramine, including blinded studies in a primate model of Parkinson's disease. Positron emission tomography (PET) imaging studies in primates have confirmed the presence of increased dopamine signals in regions treated with Spheramine. A pilot clinical study of Spheramine performed by Titan in six patients with advanced Parkinson's disease demonstrated substantial improvement (average 48%) in motor function at one-year post treatment with no significant adverse events. These results were first reported at the American Academy of Neurology (AAN) annual meeting in 2002. In June 2005, Schering AG sponsored a symposium on Spheramine at the International Congress on Parkinson's Disease and Related Disorders in Berlin. In the keynote address, Ray Watts, M.D., Professor and Chairman, Department of Neurology, University of Alabama Birmingham, presented 48-month follow-up data for the six patients in our pilot clinical study of Spheramine. The data presented indicate that Spheramine is well tolerated and that patients continued to demonstrate 43% average improvement in motor function, four years after treatment.

Spheramine is currently being studied in a multicenter, randomized, blinded, controlled clinical trial in Parkinson's disease. This Phase IIB clinical study will enroll 68 patients with advanced Parkinson's disease (Hoehn and Yahr Stages III and IV) to further evaluate the efficacy, safety, and tolerability of Spheramine. Fifty one patients have been treated to date and we expect initial efficacy results by early 2007.

Schering, our corporate partner for worldwide development and commercialization of Spheramine, is funding the clinical development program for Spheramine. Under this agreement, Schering received exclusive, worldwide development, manufacturing and commercialization rights, and, in addition to the clinical and manufacturing development funding and milestone payments, Schering will pay us a royalty on future product sales.

In July 2004, we announced that the U.S. Food and Drug Administration (FDA) had granted a Fast Track designation for Spheramine for the treatment of advanced Parkinson's disease. The Fast Track Program is designed by the FDA to facilitate the development and expedite the review of drug candidates that demonstrate the potential to treat serious or life-threatening diseases and address unmet medical needs. The FDA had previously approved Orphan Drug designation for Spheramine for the treatment of advanced Parkinson's disease.

DITPA

Our novel, proprietary product in development for the treatment of congestive heart failure (CHF) is 3,5-diiodothyropropionic acid, or DITPA, an orally active analogue of thyroid hormone. DITPA represents a potential new class of agents for CHF, based upon the central role of thyroid hormone in regulating cardiovascular function. DITPA has demonstrated in preclinical and clinical studies to date the ability to significantly improve cardiac function without significantly increasing heart rate. Specifically, in preclinical studies, when DITPA was administered alone or in combination with captopril in animal models of heart failure, cardiac output was improved and left ventricular end diastolic pressure was decreased, without significantly increasing heart rate. In addition, DITPA improved the time for ventricular relaxation, indicating a potential beneficial effect on diastolic function. In clinical studies DITPA has demonstrated similar potentially beneficial effects in preliminary human testing. A double blind, placebo controlled Phase II study in 19 patients with moderately severe (New York Hospital Association (NYHA) Class II-III) heart failure demonstrated a significant improvement in cardiac index, a significant decrease in systemic vascular resistance, and no significant increase in heart rate. These study results also demonstrated a decrease in lipid levels and supported a beneficial effect of DITPA on diastolic function. In addition, results from this study as well as previous preclinical testing suggest that DITPA is potentially compatible with other current treatments such as Angiotensin-Converting Enzyme (ACE) inhibitors.

We plan to initially develop DITPA as a potential treatment for CHF associated with low serum thyroid hormone (T₃). CHF is a syndrome of progressive decrease in cardiac function and inability of the heart to pump sufficient blood for proper function of the lungs, kidneys, and other vital organs and tissues. Symptoms include decreasing activity capacity, shortness of breath, and peripheral and pulmonary edema. There are a total of approximately nine million people in the U.S. and Europe with CHF. In the U.S., approximately 25% of patients have moderate or severe symptoms (NYHA Class III or IV), and CHF is the most common hospital discharge diagnosis in the U.S. for patients over 65. Currently, only approximately 50% of patients diagnosed with CHF survive for five years, and only 50% of patients with NYHA Class IV CHF survive one year. New treatments for CHF are greatly needed to improve symptoms, enhance cardiac function, and avoid dangerous and progressive complications of congestive heart failure.

Researchers have demonstrated that approximately 30% of patients with advanced (NYHA Class III and IV) CHF have abnormally low levels of T₃, the active form of thyroid hormone needed by heart cells, and that low levels of T₃ are a strong independent predictor of increased mortality in CHF patients.

The important role of thyroid hormone in maintaining heart and blood vessel function, and the association of low T₃ and increased mortality in CHF suggest a potential role for DITPA as a thyroid hormone replacement therapy in CHF. Currently available thyroid hormone medications are generally not suitable for chronic use in CHF, because they are primarily T₄ preparations, or have too short a half-life, and have the potential to increase heart rate, which is an unwanted side effect in CHF patients.

In December 2004, we initiated a randomized, double blind, placebo controlled Phase IIb clinical study with DITPA in NYHA Class III and Class IV CHF patients with low thyroid hormone (T₃) levels. The study will evaluate clinical and laboratory parameters related to severity of CHF, including change in global clinical status, echocardiographic parameters, B-type Natriuretic Peptide (BNP) levels, exercise testing and quality of life measurements in addition to safety. Enrollment in this study is progressing.

Additionally, we believe that scientific evidence concerning thyroid hormone and cardiovascular function suggest potential utility of DITPA in the settings of hyperlipidemia, diastolic dysfunction, left ventricular dysfunction post myocardial infarction and cardiopulmonary bypass surgery. During the fourth quarter of 2005, we are planning to initiate a Phase II clinical study in hyperlipidemia patients whose lipid levels are not sufficiently controlled by statins alone.

DITPA is also currently being evaluated in a second randomized, double blind, placebo controlled Phase II study in 150 patients with NYHA Class II-IV CHF, sponsored by the Department of Veterans Affairs Cooperative Studies Program and funded by a \$3.8 million grant.

Gallium Maltolate

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Gallium maltolate is our novel oral agent for the potential treatment of bone disease, chronic bacterial infections, and cancer. Gallium is a semi-metallic element with distinct mechanisms of action with potential for the treatment of certain cancers, bone disease and chronic bacterial infections. Gallium acts upon bone by enhancing the formation of osteoblasts and inhibiting osteoclasts, thereby increasing bone deposition and reducing bone turnover. Gallium also inhibits ribonucleotide reductase, a key enzyme essential for DNA replication in cancer cells. Additionally, gallium deprives bacteria of iron required for growth and renders resistant bacteria in biofilms susceptible to treatment.

In preclinical studies in animal models of rheumatoid arthritis conducted by us, oral dosing of gallium maltolate reduced the severity of disease related end points in a dose-dependent manner. Based on these results, we believe gallium maltolate may have potential in the treatment of rheumatoid arthritis.

Prior independent studies using intravenously administered gallium nitrate have demonstrated preliminary evidence of clinical activity in several cancers, including multiple myeloma, lymphoma, bladder cancer and prostate cancer. An intravenous formulation of gallium nitrate, received FDA approval in 1991 for the treatment of hypercalcemia of malignancy.

In the first quarter of 2005, we completed a dose ranging Phase I clinical study of gallium maltolate in cancer patients. Significant blood levels of gallium were achieved, and a maximum tolerated dose level was not reached in this study. We are currently completing development of an optimal formulation of gallium maltolate with increased bioavailability, and subsequent clinical trials are planned to use this new formulation of gallium maltolate.

ProNeura Continuous Drug Delivery Technology

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Our ProNeura continuous drug delivery system consists of a small, solid rod made from a mixture of ethylene-vinyl acetate (EVA) and a drug substance. The resulting product is a solid matrix that is placed subcutaneously, normally in the upper arm in a simple 15-minute office procedure, and is removed in a similar manner at the end of the treatment period. The drug substance is released slowly, at continuous levels, through the process of diffusion. This results in a constant rate of release similar to intravenous administration. We believe that such long-term, linear release characteristics are desirable by avoiding peak and trough level dosing that poses problems for many CNS and other therapeutic agents.

In addition to Probuphine, which is our first product in clinical testing to utilize our proprietary ProNeura long term drug delivery technology, we are developing our ProNeura sustained drug delivery technology for other potential treatment applications including chronic pain, Parkinson's disease, alcoholism, and others, in which conventional treatment is limited by variability in blood drug levels and poor patient compliance. ProNeura technology was developed to address the need for a simple, practical method to achieve continuous long-term drug delivery, and potentially can provide controlled drug release on an outpatient basis over extended periods up to 6 - 12 months.

Sponsored Research and License Agreements

We are a party to several agreements with research institutions, companies, universities and other entities for the performance of research and development activities and for the acquisition of licenses relating to such activities.

Iloperidone

In January 1997, we acquired an exclusive worldwide license under U.S. and foreign patents and patent applications relating to the use of iloperidone for the treatment of psychiatric and psychotic disorders and analgesia from Aventis SA (formerly Hoechst Marion Roussel, Inc.). The Aventis agreement provides for the payment of royalties on future net sales and requires us to satisfy certain other terms and conditions in order to retain our rights, all of which have been met to date.

In November 1997, we granted a worldwide sublicense, except Japan, to Novartis under which Novartis will continue, at its expense, all further development of iloperidone. In April 2001, that sublicense was extended to include Japan. Novartis will make our milestone payments to Aventis during the life of the Novartis agreement, and will also pay to Aventis and Titan a royalty on future net sales of the product. The results of a QTc study evaluating the EKG profile of patients taking iloperidone announced in July 2002 found that iloperidone has a similar profile to ziprasidone (Geodon), an approved product. These results have significantly delayed the regulatory filings for this product.

In June 2004, we announced that Vanda Pharmaceuticals, Inc. acquired from Novartis Pharma AG the worldwide rights to develop and commercialize iloperidone, our proprietary antipsychotic agent in Phase III clinical development for the treatment of schizophrenia and related psychotic disorders. Under its agreement with Novartis, Vanda will pursue advancement of the iloperidone Phase III development program. All of our rights and economic interests in iloperidone, including royalties on sales of iloperidone, remain essentially unchanged under the agreement.

ProNeura Long-term Drug Delivery System

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In October 1995, we acquired from the Massachusetts Institute of Technology (MIT) an exclusive worldwide license to certain U.S. and foreign patents relating to the long-term drug delivery system. The exclusive nature of the MIT license is subject to certain conditions regarding timely performance of product development activities. We must also satisfy certain other usual terms and conditions set forth in the MIT license in order to retain our license rights, including payments of royalties based on sale of products and processes incorporating the licensed technology, as well as a percentage of income derived from sublicenses of the licensed technology.

Spheramine and Other Cell Therapy Products

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In November 1992, we acquired an exclusive, worldwide license under certain U.S. and foreign patent applications relating to the CCM technology pursuant to a research and license agreement with New York University (NYU). The NYU agreement provides for the payment of royalties based on future net sales of products and processes incorporating the licensed technology, as well as a percentage of any income we receive from any sublicense thereof. We are also obligated to reimburse NYU for all costs and expenses incurred by NYU in filing, prosecuting and maintaining the licensed patents and patent applications. We must satisfy certain other terms and conditions of the NYU agreement in order to retain our license rights. These include, but are not limited to, the use of best efforts to bring licensed products to market as soon as commercially practicable and to diligently commercialize such products thereafter.

In January 2000, we entered into a sublicense agreement with Schering granting Schering exclusive worldwide commercialization rights to Spheramine. Under the agreement, we will collaborate with Schering on manufacturing and clinical development of cell therapy for the treatment of Parkinson's disease. We will receive funding for development activities, as well as potential reimbursement of certain prior research and development expenses. Schering will fully fund, and manage in collaboration with us, all future pilot and pivotal clinical studies, and manufacturing and development activities. Schering will pay us a royalty on net sales of Spheramine. Schering may terminate this sublicense for any reason by providing us 90 days notice in advance.

DITPA

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In October 2003, through the acquisition of Developmental Therapeutics, Inc. (DTI), we acquired an exclusive worldwide license to an issued U.S. patent and pending international patent applications covering DITPA. Under this license agreement, we made an initial stock payment of 1,187,500 shares of our common stock and a cash payment of \$171,250 to The University of Arizona, the licensor of the technology, and will also make an additional payment of 712,500 shares of our common stock upon the achievement of positive pivotal study results or certain

other substantial milestones within five years. A cash payment of \$102,750 or, alternatively, an additional payment of 37,500 shares of our common stock, will also be made to the licensor of the technology upon achievement of such study results or such other substantial milestones within five years. Also under this agreement, we are required to make royalty payments to the licensor based on net sales of products and processes incorporating the licensed technology, subject to minimum annual amounts commencing in the first year following the commercial sale of the product, as well as a percentage of any income derived from any sublicense of the licensed technology. In addition, we are required to make milestone payments to the licensor upon the achievement of certain clinical or regulatory milestones.

Gallium Complexes

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In August 2000, through the acquisition of GeoMed, Inc., we acquired an exclusive worldwide license to make, use and sell products developed under the patent rights to the compositions and application of gallium complexes. Under this license agreement, we are required to make an annual license payment to Dr. Lawrence Bernstein, technology inventor, of \$50,000, as well as royalty payments based on future net sales of products and processes incorporating the licensed technology. We must also pay all costs and expenses incurred in patent prosecution and maintenance.

In February 2004, we executed an agreement giving us an exclusive worldwide license to patent rights held by The Ohio State University covering the methods of treating arthritis using gallium compounds. Under this agreement, we are required to pay a license issuance fee and certain minimum annual royalty payments. In addition, we are required to pay royalties based on net sales of products and processes incorporating the licensed technology.

In July 2005, we executed an agreement giving us an exclusive worldwide license to patent rights held by the University of Iowa Research Foundation covering the methods of treating biofilm formation, pseudomonas aeruginosa growth, human deficiency virus, and intracellular pathogens and pathogens causing chronic pulmonary infection using gallium maltolate. Under this agreement, we are required to pay a license issuance fee and certain minimum annual royalty payments. In addition, we are required to pay royalties based on net sales of products and processes incorporating the licensed technology.

Patents and Proprietary Rights

We have obtained rights to certain patents and patent applications relating to our proposed products and may, in the future, seek rights from third parties to additional patents and patent applications. We also rely on trade secrets and proprietary know-how, which we seek to protect, in part, by confidentiality agreements with employees, consultants, advisors, and others. For risks we face with respect to patents and proprietary rights, see Risk Factors We may be unable to protect our patents and proprietary rights.

Iloperidone

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We hold a license from Aventis under one issued U.S. patent and certain foreign patents relating to iloperidone and its methods of use. Our license is exclusive for use in the treatment of psychiatric disorders, psychotic disorders and analgesia. Unless its term is extended, the U.S. patent that covers certain aspects of our iloperidone product and its use will expire in 2011. Prosecution of various divisional and continuation applications and their foreign counterparts continues satisfactorily, although it is uncertain whether additional patents will be granted.

ProNeura Long-term Drug Delivery System

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We are the exclusive licensee under the MIT license to three U.S. patents, expiring in 2007, 2009 and 2014, and certain European patents relating to a long-term drug delivery system, expiring in 2008 and 2010. Additional patent applications have been filed which incorporate the use of specific compounds with the ProNeura technology.

Spheramine and Other Cell Therapy Products

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We are the exclusive licensee under a license agreement with NYU of certain U.S. and foreign patents and patent applications relating to our CCM technology. The U.S. Patent and Trademark Office has issued four U.S. patents on the core subject matter underlying the NYU license and an additional two patents relating to uses in delivery of gene therapy to the central nervous system. Prosecution of various foreign counterparts continues

satisfactorily, although it is uncertain whether additional patents will be granted. Patents have issued that cover certain aspects of our Spheramine product and its use, including four U.S. patents that will expire in 2010, 2014, 2015, and 2017, one European patent, which has been unbundled as 15 European national patents, all of which will expire in 2011, and one Australian and one Canadian patent, both of which will expire in 2011. Patents have issued relating to aspects of our gene transfer technology, including two U.S. patents that will expire in 2016, two Australian patents that will expire in 2017, one South African patent that will expire in 2017, one Taiwanese patent that will expire in 2017, and one Philippine patent that will expire in 2019. These dates do not include possible term extensions.

We are the owners of certain U.S. and foreign patents and patent applications relating to our CCM technology. Prosecution of patent applications relating to these technologies continues satisfactorily, as does prosecution of their foreign counterparts, although it is uncertain whether additional patents will be granted. Three foreign patents have issued that cover certain aspects of the use of our Spheramine product and other CCM technology, including one Australian and one New Zealand patent, both of which will expire in 2018, one New Zealand patent that will expire in 2020, and one South African patent that will expire in 2020. These dates do not include possible term extensions.

DITPA

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Through our wholly-owned subsidiary, Developmental Therapeutics, Inc., we hold an exclusive license from the University of Arizona to two U.S. patents, both expiring in 2021, one pending U.S. patent, and related foreign patent applications relating to the use of 3,5-diiodothyropropionic acid (DITPA) for the treatment of heart failure and elevated cholesterol. In April 2005, we filed a U.S. patent application related to stimulating the metabolic rate in overweight patients and or for lowering triglycerides.

Gallium Complexes

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We are the exclusive licensee under the license agreement with Dr. Lawrence Bernstein of certain U.S. and foreign patents and patent applications relating to the gallium complexes. 10 U.S. patents and several foreign patents have issued that cover pharmaceutical compositions and methods of use for gallium complexes. Prosecution of other U.S. and foreign patent applications relating to this technology continues satisfactorily, although it is uncertain whether additional patents will be granted. Patents in this family will begin to expire in 2009. However, this date does not include any possible patent term extensions, typically 3 to 5 years, or restorations available under 35 U.S.C. § 154 et seq. We have also filed additional patent applications covering the use of gallium complexes in treating infection by intracellular prokaryotes and DNA viruses and treating inflammatory arthritis.

Competition

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The pharmaceutical and biotechnology industries are characterized by rapidly evolving technology and intense competition. Many companies of all sizes, including major pharmaceutical companies and specialized biotechnology companies, are engaged in the development and commercialization of therapeutic agents designed for the treatment of the same diseases and disorders that we target. Many of our competitors have substantially greater financial and other resources, larger research and development staffs and more experience in the regulatory approval process. Moreover, potential competitors have or may have patents or other rights that conflict with patents covering our technologies.

Probuphine

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With regard to Probuphine, we are aware that Reckitt Benckiser, Inc. received FDA approval in 2002 for a sublingual buprenorphine product (combined with naloxone) for the treatment of opioid dependence. This product, to be administered daily, might compete with our six-month implantable product for drug abuse. The FDA previously approved Orphan Drug designation, expiring in October 2009, for Reckitt Benckiser's sublingual buprenorphine for the treatment of opioid dependence. Other forms of buprenorphine are also in development by other companies, including intramuscular injections and intranasally delivered buprenorphine, which also might compete with our product for drug abuse.

Iloperidone

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With respect to iloperidone, several products categorized as atypical antipsychotics are already on the market. These products include Risperdal sold by Janssen Pharmaceuticals, Zyprexa sold by Eli Lilly, Clozaril sold by

Novartis, Seroquel sold by AstraZeneca, Geodon sold by Pfizer, and Abilify sold by Bristol-Myers Squibb. Competition among these companies is already intense and iloperidone will face significant competition. The success of iloperidone will depend on how it can be differentiated from products already on the market on the basis of efficacy, side-effect profile, cost, availability of formulations and dose requirements, among other things.

Spheramine

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With regard to Spheramine, we are aware of several new treatments for Parkinson's disease that are in pre-clinical and clinical development. In addition, several public and private companies, including StemCells, Inc., are actively pursuing alternative cell transplant technologies. Deep brain stimulation, also known as subthalamic stimulation is also a competing therapy for patients with advanced Parkinson's disease. The FDA has approved a stimulator device (Activa) manufactured by Medtronic, Inc., which is marketed in the U.S.

DITPA

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We are aware of several other companies which are currently marketing drugs such as beta blockers, ACE inhibitors and inotropes, which may be used for the treatment of heart failure. These companies include Abbott, AstraZeneca, Aventis, Johnson & Johnson, Pfizer and Sanofi-Synthelabo. In addition, companies such as Bristol-Myers Squibb, Merck and OSI Pharmaceuticals are developing new drugs which may be used to treat heart failure. Although DITPA represents a potential new class of agents for the treatment of CHF, these products may compete with DITPA.

Gallium Complexes

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We are aware that intravenously administered gallium nitrate is approved to treat hypercalcemia related to malignancy and may have potential for treatment of certain cancers. Other intravenous products, including the bisphosphonates, are available or are in development in the U.S. or Europe to treat osteoporosis, Paget's disease, primary hyperparathyroidism, hypercalcemia of malignancy and metastatic bone disease. Our product, gallium maltolate, is an orally administered drug and may have potential advantages in the treatment of cancer as well as bone-related diseases. Genta has previously stated that it is developing oral gallium compounds to treat bone-losing conditions.

Manufacturing

We utilize contract manufacturing organizations to manufacture our products for pre-clinical studies and clinical trials. While we have not introduced any products on the commercial market to date, at such time as we are ready to do so we will need to allocate additional resources to the manufacture of these products. We do not have the facilities to manufacture these products in-house nor do we intend to establish our own manufacturing operation at this time. We currently plan to pursue collaborative arrangements regarding the manufacture of any products that we may successfully develop.

Government Regulation

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In order to obtain FDA approval of a new drug, a company generally must submit proof of purity, potency, safety and efficacy, among other regulatory standards. In most cases, such proof entails extensive clinical and pre-clinical laboratory tests.

The procedure for obtaining FDA approval to market a new drug involves several steps. Initially, the manufacturer must conduct pre-clinical animal testing to demonstrate that the product does not pose an unreasonable risk to human subjects in clinical studies. Upon completion of such animal testing, an Investigational New Drug application, or IND, must be filed with the FDA before clinical studies may begin. An IND application consists of, among other things, information about the proposed clinical trials. Among the conditions for clinical studies and IND approval is the requirement that the prospective manufacturer's quality control and manufacturing procedures conform to current Good Manufacturing Practices (cGMP), which must be followed at all times. Once the IND is approved, the clinical trials may begin.

Human clinical trials on drugs are typically conducted in three sequential phases, although the phases may overlap. Phase I trials typically consist of testing the product in a small number of healthy volunteers or patients, primarily for safety in one or more doses. During Phase II, in addition to safety, dose selection and efficacy of the

product is evaluated in up to several hundred patients and sometimes more. Phase III trials typically involve additional testing for safety and confirmation of efficacy in an expanded patient population at multiple test sites. The FDA may order the temporary or permanent discontinuation of a clinical trial at any time.

The results of the pre-clinical and clinical testing on new drugs, if successful, are submitted to the FDA in the form of a New Drug Application, or NDA. The NDA approval process requires substantial time and effort and there can be no assurance that any approval will be granted on a timely basis, if at all. The FDA may refuse to approve an NDA if applicable regulatory requirements are not satisfied. Product approvals, if granted, may be withdrawn if compliance with regulatory standards is not maintained or problems occur following initial marketing.

The FDA may also require post-marketing testing and surveillance of approved products, or place other conditions on their approvals. These requirements could cause it to be more difficult or expensive to sell the products, and could therefore restrict the commercial applications of such products. Product approvals may be withdrawn if compliance with regulatory standards is not maintained or if problems occur following initial marketing. With respect to patented products or technologies, delays imposed by the governmental approval process may materially reduce the period during which we will have the exclusive right to exploit such technologies.

We believe we are in compliance with all material applicable regulatory requirements. However, see [Risk Factors](#) We must comply with extensive government regulations for additional risks we face regarding regulatory requirements and compliance.

Foreign Regulatory Issues

Sales of pharmaceutical products outside the United States are subject to foreign regulatory requirements that vary widely from country to country. Whether or not FDA approval has been obtained, approval of a product by a comparable regulatory authority of a foreign country must generally be obtained prior to the commencement of marketing in that country. Although the time and data required to obtain such approval may be longer or shorter than that required for FDA approval, the requirements for FDA approval are among the most detailed in the world and FDA approval generally takes longer than foreign regulatory approvals.

Legal Proceedings

In March 2005, Dr. Bernard Sabel initiated an appraisal proceeding in the Court of Chancery of the State of Delaware relating to the merger of Titan's subsidiary ProNeura, Inc. into Titan. The complaint indicates that Mr. Sabel wants the court to appraise the value of the 108,800 shares of the common stock of ProNeura owned by him. The complaint does not specify an amount that Mr. Sabel considers the fair value of the shares. Discovery is proceeding in connection with this appraisal proceeding.

Employees

At September 30, 2005 we had 55 full-time employees, after the previously noted workforce reduction. None of our employees are represented by a labor union. We have not experienced any work stoppages and consider our relations with our employees to be good.

MANAGEMENT

Executive Officers, Significant Employees and Directors

Set forth below are the name, age and position and a brief account of the business experience of each of our executive officers and directors as of October 6, 2005.

| Name | Age | Office |
|----------------------------------|-----|--|
| Louis R. Bucalo, M.D. | 46 | Chairman, President and Chief Executive Officer |
| Sunil Bhonsle | 55 | Executive Vice President, Chief Operating Officer and Director |
| Richard C. Allen, Ph.D. | 62 | Executive Vice President, Cell Therapy |
| Robert E. Farrell, J.D. | 55 | Executive Vice President and Chief Financial Officer |
| Victor J. Bauer, Ph.D. | 70 | Director |
| Eurelio M. Cavalier(1)(3)(4) | 72 | Director |
| Hubert E. Huckel, M.D.(1)(2)(3) | 73 | Director |
| M. David MacFarlane, Ph.D.(2)(4) | 65 | Director |
| Ley S. Smith(1)(2)(4) | 70 | Director |
| Konrad M. Weis, Ph.D.(1)(3) | 76 | Director |
| Joachim Friedrich Kapp | 63 | Director |

-
- (1) Member of Executive Committee
- (2) Member of Audit Committee
- (3) Member of Compensation Committee
- (4) Member of Nominating Committee

Louis R. Bucalo, M.D. is the founder of Titan and has served as our President and Chief Executive Officer since January 1993. Dr. Bucalo has served as a director of Titan since March 1993 and was elected Chairman of the Board of Directors in January 2000. From July 1990 to April 1992, Dr. Bucalo was Associate Director of Clinical Research at Genentech, Inc., a biotechnology company. Dr. Bucalo holds an M.D. from Stanford University and a B.A. in biochemistry from Harvard University.

Sunil Bhonsle has served as our Executive Vice President and Chief Operating Officer since September 1995, and has served as a director of Titan since February 2004. Mr. Bhonsle served in various positions, including Vice President and General Manager Plasma Supply and Manager Inventory and Technical Planning, at Bayer Corporation from July 1975 until April 1995. Mr. Bhonsle holds an M.B.A. from the University of California at Berkeley and a B.Tech. in chemical engineering from the Indian Institute of Technology.

Richard C. Allen, Ph.D., has served as our Executive Vice President, Cell Therapy, since August 1995. From January 1995 until it was merged into Titan in March 1999, he also served as President and Chief Executive Officer of Theracell, Inc. From June 1991 until December 1994, Dr. Allen was Vice President and General Manager of the Neuroscience Strategic Business Unit of Hoechst-Roussel Pharmaceuticals, Inc. Dr. Allen holds a Ph.D. in medicinal chemistry and a B.S. in pharmacy from the Medical College of Virginia.

Robert E. Farrell has served as our Executive Vice President and Chief Financial Officer since September 1996. Mr. Farrell was employed by Fresenius USA, Inc. from 1991 until August 1996 where he served in various capacities, including Vice President Administration, Chief Financial Officer and General Counsel. His last position was Corporate Group Vice President. Mr. Farrell holds a B.A. from the University of Notre Dame and a J.D. from Hastings College of Law, University of California.

Victor J. Bauer, Ph.D., has served on our Board of Directors since November 1997. Dr. Bauer serves as the Executive Vice President of Concordia Pharmaceuticals, Inc., a biopharmaceutical company he co-founded in January 2004. From February 1997 through March 2003, Dr. Bauer was employed by Titan, most recently as our Executive Director of Corporate Development. From April 1996 until its merger into Titan, Dr. Bauer also served as a director and Chairman of Theracell. From December 1992 until February 1997, Dr. Bauer was a self-employed consultant to companies in the pharmaceutical and biotechnology industries. Prior to that time, Dr. Bauer was with Hoechst-Roussel Pharmaceuticals Inc., where he served as President from 1988 through 1992.

Eurelio M. Cavalier has served on our Board of Directors since September 1998. He was employed in various capacities by Eli Lilly & Co. from 1958 until his retirement in 1994, serving as Vice President Sales from 1976 to 1982 and Group Vice President U.S. Pharmaceutical Business Unit from 1982 to 1993. Mr. Cavalier currently serves on the Board of Directors of ProSolv, Inc.

Hubert E. Huckel, M.D., has served on our Board of Directors since October 1995. Dr. Huckel serves as the Executive Chairman of the Board of Concordia Pharmaceuticals, Inc., a biopharmaceutical company he co-founded in January 2004. He served in various positions with The Hoechst Group from 1964 until his retirement in December 1992. At the time of his retirement, Dr. Huckel was Chairman of the Board of Hoechst-Roussel Pharmaceuticals, Inc., Chairman and President of Hoechst-Roussel Agri-Vet Company and a member of the

Executive Committee of Hoechst Celanese Corporation. He currently serves on the Board of Directors of Thermogenesis, Corp. and Amarin Pharmaceuticals, plc and is a member of their compensation committees.

M. David MacFarlane, Ph.D., has served on the Board of Directors since May 2002. From 1989 until his retirement in August 1999, Dr. MacFarlane served as Vice President and Responsible Head of Regulatory Affairs of Genentech, Inc. Prior to joining Genentech, Inc., he served in various positions with Glaxo Inc., last as Vice President of Regulatory Affairs.

Ley S. Smith has served on our Board of Directors since July 2000. He served in various positions with The Upjohn Company and Pharmacia & Upjohn from 1958 until his retirement in November 1997. From 1991 to 1993 he served as Vice Chairman of the Board of The Upjohn Company, and from 1993 to 1995 he was President and Chief Operating Officer of The Upjohn Company. At the time of his retirement, Mr. Smith was Executive Vice President of Pharmacia & Upjohn, and President of Pharmacia & Upjohn's U.S. Pharma Product Center. He currently serves on the Board of Directors of Protana, Inc.

Konrad M. Weis, Ph.D., has served on our Board of Directors since March 1993. He is the former President, Chief Executive Officer and Honorary Chairman of Bayer Corporation. Dr. Weis serves as a director of PNC Equity Management Company, Michael Baker Corporation, Visible Genetics, Inc. and Demegen, Inc.

Jochim Friedrich Kapp, M.D., Ph.D. has served on our Board of Directors since August 2005. Mr. Kapp has worked in various capacities for Schering AG since 1991, most recently as the President of the Global Business Unit on Specialized Therapeutics. Prior to joining Schering AG, Dr. Kapp worked in various capacities with Warner Lambert and its subsidiaries. Dr. Kapp holds an M.D. and a Ph.D. from the University of Essex.

Executive Compensation

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The following summary compensation table sets forth the aggregate compensation awarded to, earned by, or paid to the Chief Executive Officer and to executive officers whose annual compensation exceeded \$100,000 for the fiscal year ended December 31, 2004 (collectively, the named executive officers) for services during the fiscal years ended December 31, 2004, 2003 and 2002:

Summary Compensation Table

| Name and Principal Position | Year | Annual Compensation Salary | Bonus | Other Compensation |
|--|------|----------------------------|-------|--------------------|
| Louis R. Bucalo, M.D. President and Chief Executive Officer | 2004 | \$ 357,042 | | |
| | 2003 | \$ 348,038 | | |
| | 2002 | \$ 339,896 | | |
| Sunil Bhonsle Executive Vice President and Chief Operating Officer | 2004 | \$ 272,125 | | |
| | 2003 | \$ 265,276 | | |
| | 2002 | \$ 259,167 | | |
| Richard C. Allen, Ph.D. Executive Vice President, Cell Therapy | 2004 | \$ 238,200 | | |
| | 2003 | \$ 232,230 | | |
| | 2002 | \$ 226,821 | | |
| Robert E. Farrell, J.D. Executive Vice President and Chief Financial Officer | 2004 | \$ 227,217 | | |
| | 2003 | \$ 221,447 | | |
| | 2002 | \$ 216,254 | | \$ 59,766(1) |

(1) The amount disclosed for Mr. Farrell represents an accrued vacation payment made in 2002.

Stock Options

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The following table contains information concerning the stock option grants made to the named executive officers during the fiscal year ended December 31, 2004. No stock appreciation rights were granted to these individuals during such year.

| Name | Number of Securities Underlying Options Granted | % Of Total Options Granted to Employees In Fiscal Year | Individual Grant | | Expiration Date | Potential Realizable Value at Assumed Annual Rate of Stock Price Appreciation For Option Terms | | | |
|-------------------|---|--|-----------------------------------|------|-----------------|--|---------|----|---------|
| | | | Exercise or Base Price (\$/Sh)(1) | | | 5% | 10% | | |
| Louis R. Bucalo | 75,000 | 6.73% | \$ | 3.69 | 02/09/2014 | \$ | 174,047 | \$ | 441,068 |
| Louis R. Bucalo | 20,000 | 1.79% | \$ | 2.37 | 09/01/2014 | \$ | 32,416 | \$ | 79,693 |
| Sunil Bhonsle | 60,000 | 5.38% | \$ | 3.69 | 02/09/2014 | \$ | 139,237 | \$ | 352,855 |
| Richard C. Allen | 30,000 | 2.69% | \$ | 3.69 | 02/09/2014 | \$ | 69,619 | \$ | 176,427 |
| Robert E. Farrell | 35,000 | 3.14% | \$ | 3.69 | 02/09/2014 | \$ | 81,222 | \$ | 205,832 |

(1) The exercise price may be paid in cash, in shares of common stock valued at the fair market value on the exercise date or through a cashless exercise procedure involving a same-day sale of the purchased shares.

Aggregate Option Exercises in Last Fiscal Year and Fiscal Year-End Option Values

The following table sets forth information concerning option exercises and option holdings for the fiscal year ended December 31, 2004 with respect to the named executive officers. No stock appreciation rights were exercised during such year or were outstanding at the end of that year.

| Name | Shares Acquired on Exercise | Value Realized | Number of Securities Underlying Unexercised Options at FY-End | | Value of Unexercised In-The-Money Options at FY-End(1) | |
|-------------------|-----------------------------|----------------|---|---------------|--|---------------|
| | | | Exercisable | Unexercisable | Exercisable | Unexercisable |
| Louis R. Bucalo | 81,755 | \$ 253,441 | 1,552,356 | 109,063 | \$ 230,149 | \$ 41,779 |
| Sunil Bhonsle | | | 681,655 | 66,250 | \$ 75,250 | \$ 10,750 |
| Richard C. Allen | | | 565,309 | 34,375 | \$ 241,396 | \$ 7,525 |
| Robert E. Farrell | | | 277,677 | 39,375 | \$ 155,799 | \$ 7,525 |

(1) Based on the fair market value of our common stock at year-end, \$3.22 per share, less the exercise price payable for such shares.

Equity Compensation Plan Information

The following table sets forth aggregate information regarding our equity compensation plans in effect as of December 31, 2004:

| Plan category | Number of securities to be issued upon exercise of outstanding options (a) | Weighted- average exercise price of outstanding options (b) | Number of securities remaining available for future issuance under equity compensation plans (c) |
|--|---|---|--|
| Equity compensation plans approved by security holders | 4,090,831 | \$ 9.18 | 1,399,146 |
| Equity compensation plans not approved by security holders(1)(2) | 2,354,555 | \$ 7.01 | 65,091 |
| Total | 6,445,386 | \$ 8.39 | 1,464,237 |

(1) In August 2002, we amended our 2001 Employee Non-Qualified Stock Option Plan. Pursuant to this amendment, a total of 1,750,000 shares of common stock were reserved and authorized for issuance for option grants to employees and consultants who are not officers or directors of Titan.

(2) In November 1999 and in connection with the redemption of warrants, we granted 813,000 non-qualified stock options outside of our stock option plans to our executive officers, at an exercise price of \$12.69, vesting equally over 36 months from the date of grant.

Executive Employment Agreements

We are a party to an employment agreement with Dr. Bucalo which, as amended in February 2005, expires in February 2008 and provides for a base annual salary of \$210,000, subject to annual increases of 5% and bonuses of up to 25% at the discretion of the Board of Directors. In the event of the termination of the agreement by us without just cause or by Dr. Bucalo for just cause, we are obligated to make severance payments equal to his base annual salary for the greater of the balance of the term of the agreement or two years, subject to offset for earnings after the first 18 months.

Employment agreements with each of Dr. Allen, Mr. Bhonsle and Mr. Farrell provide for a base annual salary of \$185,000 subject to automatic annual increases based on increases in the consumer price index, and bonuses of up to 20% at the discretion of the Board of Directors. In the event the employee's employment is terminated other than for good cause (as defined in each employment agreement), we are obligated to make severance payments equal to the base annual salary for six months. All of the agreements contain confidentiality provisions.

Director Compensation

Non-employee directors are entitled to receive a fee for each meeting attended and all directors are entitled to receive stock options pursuant to our stockholder-approved stock option plans, including an initial grant of 10,000 options upon becoming a director, a biennial grant of 20,000 options thereafter, and an annual grant of 5,000 options for each committee on which they serve. During 2004, each director was granted an annual option to purchase 5,000 shares of our common stock at an exercise price of \$2.37, which was equal to the fair market value of our common stock at date of grant, with respect to each committee of the Board on which each director served. In addition to having their out-of-pocket expenses reimbursed, non-employee directors received \$2,500 for each Board of Directors meeting attended in 2004. Directors are

not precluded from serving us in any other capacity and receiving compensation therefore.

Compensation Committee Interlocks And Insider Participation

Members of our Compensation Committee of the Board of Directors were Mr. Eurelio M. Cavalier, Dr. Hubert E. Huckel and Dr. Konrad M. Weis. No member of our Compensation Committee was, or has been, an officer or employee of Titan or any of our subsidiaries.

No member of the Compensation Committee has a relationship that would constitute an interlocking relationship with our Executive Officers or Directors or another entity.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth, as of October 6, 2005, certain information concerning the beneficial ownership of our common stock by (i) each stockholder known by us to own beneficially five percent or more of our outstanding common stock; (ii) each director; (iii) each executive officer; and (iv) all of our executive officers and directors as a group, and their percentage ownership and voting power.

| Name and Address of Beneficial Owner(1) | Shares Beneficially Owned(2) | Percent of Shares Beneficially Owned |
|--|-------------------------------------|---|
| Louis R. Bucalo, M.D. | 2,146,029(3) | 6.6% |
| Richard C. Allen, Ph.D. | 604,449(4) | 1.9% |
| Victor J. Bauer, Ph.D. | 261,268(5) | * |
| Sunil Bhonsle | 928,299(6) | 2.9% |
| Eurelio M. Cavalier | 145,624(7) | * |
| Robert E. Farrell, J.D. | 364,832(8) | 1.1% |
| Hubert Huckel, M.D. | 178,967(9) | * |
| Dr. Joachim-Friedrich Kapp | | * |
| M. David MacFarlane, Ph.D. | 49,374(10) | |