

ENZON PHARMACEUTICALS INC

Form 10-K

March 02, 2007

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

**Form 10-K**

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

**For the Fiscal Year Ended December 31, 2006**

**OR**

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

**For the transition period from        to**

**Commission file number: 0-12957**

**Delaware**

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

**22-2372868**

*(I.R.S. Employer  
Identification No.)*

**685 Route 202/206, Bridgewater, New Jersey**

*(Address of principal executive offices)*

**08807**

*(Zip Code)*

**Registrant's telephone number, including area code:**

**(908) 541-8600**

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

**Title of Class**

**Name of Exchange on Which Registered**

Common Stock, \$0.01 par value;  
Preferred Stock Purchase Rights

NASDAQ Global Market

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

**None**

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

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

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

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, or a non-accelerated filer. See definition of "accelerated filer and large accelerated filer" in Rule 12b-2 of the Exchange Act. (Check One):

Large accelerated filer  Accelerated filer  Non-accelerated filer

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

The aggregate market value of the Common Stock, par value \$.01 per share, held by non-affiliates of the registrant was approximately \$328,096,000 as of June 30, 2006, based upon the closing sale price on the \$7.54 reported for such date. Shares of common stock held by each officer and director and by each person who owns 10% or more of the outstanding common stock have been excluded in that such shares may be deemed to be affiliate shares. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

There were 44,043,833 shares of the registrant's common stock issued and outstanding as of February 28, 2007.

#### **DOCUMENTS INCORPORATED BY REFERENCE**

Portions of the registrant's definitive Proxy Statement for the Annual Meeting of Stockholders scheduled to be held on May 16, 2007 to be filed with the Commission not later than 120 days after the close of the registrant's fiscal year, have been incorporated by reference, in whole or in part, into Part III, Items 10, 11, 12, 13 and 14 of this Annual Report on Form 10-K.

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**ENZON PHARMACEUTICALS, INC.**

**2006 Form 10-K Annual Report**

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Abelcet<sup>®</sup>, Adagen<sup>®</sup>, Oncaspar<sup>®</sup>, and SCA<sup>®</sup> are our registered trademarks. Other trademarks and trade names used in this Transition Report are the property of their respective owners.

This Annual Report contains forward-looking statements, which can be identified by the use of forward-looking terminology such as believes, expects, may, will, should, potential or anticipates or the negative thereof, or variations thereof, or comparable terminology, or by discussions of strategy. No assurance can be given that the future results covered by the forward-looking statements will be achieved. The matters set forth in Item 1A. Risk Factors constitute cautionary statements identifying important factors with respect to such forward-looking statements, including certain risks and uncertainties that could cause actual results to vary materially from the future results indicated in such forward-looking statements. Other factors could also cause actual results to vary materially from the future results indicated in such forward-looking statements. All information in this Annual Report on Form 10-K is as of March 2, 2007, unless otherwise indicated. The Company does not intend to update this information to reflect events after the date of this report.

We maintain a website at [www.enzon.com](http://www.enzon.com) to provide information to the general public and our stockholders on our products, resources and services along with general information on Enzon and its management, career opportunities, financial results and press releases. Copies of our most recent Annual Report on Form 10-K, our Quarterly Reports on Form 10-Q and our other reports filed with the Securities and Exchange Commission, or the SEC, can be obtained, free of charge as soon as reasonably practicable after such material is electronically filed with, or furnished to the SEC, from our Investor Relations Department by calling 908-541-8777, through an e-mail request to [investor@enzon.com](mailto:investor@enzon.com), through the SEC's website by clicking the SEC Filings link from the Investors Info page on our website at [www.enzon.com](http://www.enzon.com) or directly from the SEC's website at [www.sec.gov](http://www.sec.gov). Our website and the information contained therein or connected thereto are not intended to be incorporated into this Annual Report on Form 10-K.

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**UNITED STATES SECURITIES AND EXCHANGE COMMISSION**

**FORM 10-K**

**ENZON PHARMACEUTICALS, INC.**

**PART I**

**ITEM 1. BUSINESS**

**GENERAL**

We are a biopharmaceutical company dedicated to the development and commercialization of therapeutics to treat patients with cancer and adjacent diseases. Our hospital and oncology sales forces market Oncaspar<sup>®</sup>, DepoCyt<sup>®</sup>, Abelcet<sup>®</sup> and Adagen<sup>®</sup> in the United States. In addition, we receive royalties on sales of PEG-INTRON<sup>®</sup>, marketed by Schering-Plough Corporation, and Macugen<sup>®</sup>, marketed by OSI Pharmaceuticals, Inc. and Pfizer Inc. Our product-driven strategy includes an extensive drug development program that leverages our proprietary technologies, including a Customized Linker Technology<sup>™</sup> PEGylation platform that utilizes customized linkers designed to release compounds at a controlled rate. We complement our internal research and development efforts with strategic initiatives, such as partnerships designed to broaden our revenue base or provide access to promising new technologies or product development opportunities. We also engage in contract manufacturing opportunities with third parties to improve our efficiency.

**STRATEGY**

In 2005, we developed a comprehensive long-term strategic plan designed to strengthen our business, build long-term value, and attain our goal of becoming a premier, novel, and fully-integrated biopharmaceutical company with a focus in cancer and adjacent diseases. To this end, we are executing a strategy that focuses on the following three phases of corporate priorities for the next several years: (i) investing in our extensive infrastructure that spans research, development, manufacturing, and sales and marketing, (ii) improving our organizational efficiencies and (iii) becoming a recognized leader in oncology and adjacent therapeutic areas.

Our strategy revolves around the following key imperatives:

*Investing to maximize the potential of our marketed products.* We are placing a significant effort behind improving our top line performance. We are investing in our marketed brands to optimize and broaden their commercial potential. These initiatives include effective market research, life cycle management plans, post-marketing clinical programs, and other new programs to differentiate and extend the utility of our products.

*Focusing on innovation.* We are cultivating a renewed organizational commitment to innovation by (i) investing in our technological base, (ii) growing our intellectual property estate, and (iii) building a novel research and development pipeline of projects that are strategically focused with promising pathways to regulatory approval. We are committed to making targeted, disciplined investments in areas where we believe we can make a unique contribution and achieve differentiation. For instance, we have extensive know-how and a demonstrated track record in PEGylation, including our Customized Linker Technology<sup>™</sup> platform. PEG is a proven means of enabling or enhancing the performance of pharmaceuticals with delivery limitations. We are committed to further evolving the potential of this technology and bringing new PEG product development opportunities forward, both through proprietary and externally-sourced programs.

*Maximizing the return on our asset base.* We are focused on leveraging our internal resources and infrastructure as a means of broadening our revenue base, improving our operational efficiencies, and generating value. Over the past two years, we have added personnel with significant experience and talent throughout our business and strengthened our cross-functional infrastructure. Our management team has extensive experience in the pharmaceutical industry, particularly in the development and commercialization of oncology products. In addition, we will seek to increase our co-development and contract manufacturing by leveraging our PEGylation technology platform that has broad clinical utility in a wide array of therapeutic areas and our manufacturing facility that has the capability of formulating complex injectable pharmaceutical products.

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*Maintaining a high-performance, value-focused corporate culture.* We recognize that the successful execution of our long-term plan begins with ensuring that our employees understand the stated goals of the organization and are held accountable for making meaningful contributions to our corporate results. We are cultivating a performance-driven culture, focused on delivering on our promises. We have also placed an increased emphasis on measuring and rewarding performance throughout the organization.

During 2006, we put a number of key initiatives in place to advance these priorities, including:

To further our goal of establishing a successful franchise of cancer therapeutics, we are designing a number of new programs to optimize the value of our currently marketed cancer products, Oncaspar and DepoCyt. Several recent achievements for Oncaspar include: (i) the reduction of the royalty paid to Sanofi-Aventis, (ii) the expansion of the label to include first-line treatment in patients with acute lymphoblastic leukemia (ALL), and (iii) the initiation of a Phase I study in solid tumors.

Lifecycle management is being deployed as a critical organizational practice with plans underway for all of our marketed brands. We believe lifecycle management is an essential tool for building sustainability and maximizing value for our products. We continue to evaluate several new means of driving sustainable commercial success for our marketed products, including new therapeutic areas, modes of administration, and delivery mechanisms. Oncaspar, for example, was approved for the use in first-line treatment for patients with acute lymphoblastic leukemia (ALL), as well as intravenous (IV) administration. It is also currently being evaluated for the use in solid tumors and lymphomas. Our management has aligned all of our core functions, from research through commercialization, on maximizing the value of our products through integrated lifecycle management programs.

We secured the long-term availability of L-asparaginase for the manufacture of Oncaspar. We entered into a new agreement with Ovation Pharmaceuticals, Inc. for the supply of L-asparaginase. The previous supply agreement expired on December 31, 2006. Under the new agreement, Ovation has agreed to supply a sufficient quantity of L-asparaginase material through 2009. In addition, we are required to make an upfront payment for a non-exclusive license to the cell line that is owned by Ovation and from which the L-asparaginase material is currently sourced. We have committed to effectuate a technology transfer of the cell line and manufacturing to our own supplier by December 31, 2009 in order to ensure long term availability of the L-asparaginase material.

We continue to rebuild our research and development pipeline. In July 2006, we entered into a global collaboration with Santaris Pharma A/S to co-develop and commercialize a series of innovative RNA antagonists based on the LNA<sup>®</sup> (locked nucleic acid) technology. Under this agreement, we obtained the exclusive worldwide license, except for Europe, to two preclinical development compounds, the HIF-1 alpha antagonist and the Survivin antagonist, and six additional proprietary RNA antagonist candidates, all to be directed against novel oncology targets.

We continue to identify opportunities in our contract manufacturing business to (i) foster new contract manufacturing partnerships, (ii) enhance our current processes, (iii) broaden our manufacturing expertise and infrastructure, and (iv) expand the utilization of our finish and fill capabilities. During 2006, we were successful in securing an additional two manufacturing contracts.

We improved our financial condition. In 2006 we successfully refinanced approximately 70% of our debt position. In May and June 2006 we raised \$275.0 million principal amount (\$267.3 million net proceeds) in an offering of 4% convertible subordinated notes due in July 2013. Following the offering, we repurchased



\$271.4 million of our existing 4.5% convertible senior notes due in 2008.

## **PRODUCTS SEGMENT**

Our Products segment includes the manufacturing, marketing and selling of pharmaceutical products for patients with cancer and other life-threatening diseases. We have developed or acquired four therapeutic products that we currently market. We market these products through our hospital and specialty U.S. sales force that calls upon specialists in oncology, hematology, infectious disease, and other critical care disciplines. Our four marketed brands are Oncaspar, DepoCyt, Abelcet, and Adagen.

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***1) Oncaspar***

Oncaspar is a PEG-enhanced version of a naturally occurring enzyme called L-asparaginase derived from *E. coli*. Oncaspar is used in conjunction with other chemotherapeutics to treat patients with ALL. We developed Oncaspar internally and received U.S. marketing approval from the U.S. Food and Drug Administration (FDA) for Oncaspar in February 1994. We licensed rights to Oncaspar for North America and most of the Asia/Pacific region to Rhone Poulenc Rorer, now part of Sanofi-Aventis. In June 2002, we licensed back those rights from Sanofi-Aventis.

L-asparaginase is an enzyme that depletes the amino acid asparagine, which certain leukemic cells are dependent upon for survival. Other companies market unmodified L-asparaginase for the treatment of ALL. The therapeutic value of unmodified L-asparaginase is limited by its short half-life, which requires frequent injections, and its propensity to cause a high incidence of allergic reactions. We believe that Oncaspar offers significant therapeutic advantages over unmodified L-asparaginase, namely a significantly increased half-life in blood allowing fewer injections, and fewer allergic reactions.

In October 2005, we amended our license agreement with Sanofi-Aventis for Oncaspar. The amendment became effective in January 2006 and includes a significant reduction in our royalty rate, with a single-digit royalty percentage payable by us only on those aggregate annual sales of Oncaspar in the U.S. and Canada that are in excess of \$25.0 million. Under the amended agreement we made an upfront cash payment of \$35.0 million to Sanofi-Aventis in January 2006. We are obligated to make royalty payments through June 30, 2014, at which time all of our royalty obligations will cease.

Since December 2004, we have been focusing on a number of new clinical initiatives designed to potentially expand the Oncaspar label beyond its current indications. Several key initiatives are summarized below.

In November 2005, we received approval from the FDA for a labeling change for Oncaspar allowing for administration via the intravenous route. Intravenous administration provides clinicians with a treatment option that will potentially reduce the number of injections for pediatric cancer patients who require Oncaspar in their treatment regimen. Previously, Oncaspar's administration was limited to intramuscular administration, which involves injecting the drug directly into the muscle and is often painful to patients.

In July 2006, we announced that the FDA had approved our supplemental Biologics License Application (sBLA) for Oncaspar for use as a component of a multi-agent chemotherapeutic regimen for the first-line treatment of patients with ALL, which we had submitted in November 2005. The FDA approved the new first-line indication for Oncaspar based on data from two studies conducted by the Children's Cancer Group (CCG), CCG-1962 and CCG-1991, with safety data from over 2,000 pediatric patients. The Children's Cancer Group is now incorporated under the Children's Oncology Group (COG).

On August 1<sup>st</sup>, 2006 we announced that we had initiated a phase I clinical trial of Oncaspar to assess its safety and potential utility in the treatment of advanced solid tumors and lymphomas in combination with Gemzar<sup>®</sup> (gemcitabine HCl for Injection).

We manufacture Oncaspar in the U.S.

***2) DepoCyt***

DepoCyt is an injectable chemotherapeutic agent approved for the treatment of patients with lymphomatous meningitis. It is a sustained release formulation of the chemotherapeutic agent, cytarabine or Ara-C. DepoCyt

gradually releases cytarabine into the cerebral spinal fluid (CSF) resulting in a significantly extended half-life, prolonging the exposure to the therapy and allowing for more uniform CSF distribution. This extends the dosing interval to once every two weeks, as compared to the standard twice-weekly intrathecal chemotherapy dosing of cytarabine. We acquired the U.S. and Canadian rights to DepoCyt from SkyePharma in December 2002.

Lymphomatous meningitis is a debilitating form of neoplastic meningitis, a complication of cancer that is characterized by the spread of cancer to the central nervous system and the formation of secondary tumors within the thin membranes surrounding the brain. Neoplastic meningitis can affect all levels of the central nervous system, including the cerebral hemispheres, cranial nerves, and spinal cord. Symptoms can include numbness or weakness

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in the extremities, pain, sensory loss, double-vision, loss of vision, hearing problems, and headaches. Neoplastic meningitis is often not recognized or diagnosed in clinical practice. Autopsy studies have found higher rates of neoplastic meningitis than those observed in clinical practice. These autopsy studies suggest that 5% of all cancer patients will develop neoplastic meningitis during the course of their illness.

In a randomized, multi-center trial of patients with lymphomatous meningitis, treated either with 50 mg of DepoCyt administered every 2 weeks or standard intrathecal chemotherapy administered twice a week, DepoCyt achieved a complete response rate of 41% compared with a complete response rate of 6% for unencapsulated cytarabine. In this study, complete response was prospectively defined as (i) conversion of positive to negative CSF cytology and (ii) the absence of neurologic progression. DepoCyt also demonstrated an increase in the time to neurologic progression of 78.5 days for DepoCyt versus 42 days for unencapsulated cytarabine; however, there are no controlled trials that demonstrate a clinical benefit resulting from this treatment, such as improvement in disease-related symptoms, increased time to disease progression or increased survival.

We are currently designing new sales and marketing programs to enhance the commercial value of DepoCyt by expanding awareness of the symptoms and benefits of treating lymphomatous meningitis, and marketing programs that focus on the positive product attributes of DepoCyt as compared to unencapsulated cytarabine. We are also examining the potential role of DepoCyt in other cancers that can spread to the central nervous system.

DepoCyt was approved under the Accelerated Approval regulations of Subpart H of the Federal Food, Drug and Cosmetic Act. These regulations are intended to make promising products for life-threatening diseases available to the market on the basis of preliminary evidence prior to formal demonstration of patient benefit. Approvals granted under Subpart H are provisional and require a written commitment to complete post-approval clinical studies that formally demonstrated patient benefit. Our licensor, SkyePharma, completed and filed the results of required post-approval trials for DepoCyt with the FDA. If the FDA determines that the study fails to demonstrate patient benefit, the registration for DepoCyt may be subject to withdrawal.

DepoCyt is manufactured by SkyePharma PLC.

### **3) *Abelcet***

Abelcet is a lipid complex formulation of amphotericin B used primarily in the hospital to treat immuno-compromised patients with invasive fungal infections. It is indicated for the treatment of invasive fungal infections in patients who are intolerant of conventional amphotericin B therapy or for whom conventional amphotericin B therapy has failed. Abelcet provides patients with the broad-spectrum efficacy of conventional amphotericin B, while providing significantly lower kidney toxicity than amphotericin B.

We acquired the U.S. and Canadian rights to Abelcet from Elan Pharmaceuticals PLC (Elan) in November 2002. As part of the acquisition, we also acquired the operating assets associated with the development, manufacture, sales and marketing of Abelcet in the U.S. and Canada, including a 56,000 square foot manufacturing facility in Indianapolis, Indiana. In addition to U.S. and Canada distribution rights, we also acquired the rights to develop and commercialize the product in Japan.

Invasive fungal infections are life-threatening, often affecting patients with compromised immune systems, such as those undergoing treatment for cancer, recipients of organ or bone marrow transplants or patients infected with the Human Immunodeficiency Virus (HIV). Invasive fungal infections can be caused by a multitude of different fungal pathogens that attack the patient's weakened immune system. Effective treatment is critical and can mean the difference between life and death, and often must be initiated even in the absence of a specific diagnosis.

Over the past 20 years, there has been an increase in severe fungal infections largely as a result of advances in medical treatment, such as increasingly aggressive chemotherapy procedures, advances in organ and bone marrow transplantation procedures, and an increase in the population of immuno-compromised patients, namely transplant patients, patients with cancer undergoing chemotherapy, and patients with HIV/AIDS. Immuno-compromised patients are at risk from a variety of fungal infections that are normally combated by an individual's healthy immune system. For these patients, such infections represent a major mortality risk.

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Amphotericin B, the active ingredient in Abelcet, is a broad-spectrum polyene antifungal agent that is believed to act by penetrating the cell wall of a fungus, thereby killing it. In its conventional form, amphotericin B is particularly toxic to the kidneys, an adverse effect that often restricts the amount of the drug that can be administered to a patient. While still exhibiting residual nephrotoxicity, Abelcet is able to deliver therapeutic levels of amphotericin B while significantly reducing the kidney toxicity associated with the conventional drug.

Since 2004, we have been experiencing increasingly competitive market conditions for Abelcet, primarily due to the introduction of newer antifungal agents. In 2005, our new leadership team began placing a significant effort behind better supporting this product and addressing the competitive challenges we are facing through numerous data-driven initiatives designed to stabilize sales of Abelcet and ultimately establish a foundation for growth. Key examples include: (i) identifying new ways to take advantage of Abelcet's strong product attributes and differentiating it from the competition; (ii) redefining core market segments where there is a strong clinical rationale for Abelcet; (iii) retraining and refocusing our field force with new support systems, including new resources demonstrating the clinical advantages of Abelcet; (iv) identifying and focusing on target institutions that offer opportunities for sales growth; and (v) investing in activities designed to optimize the lifecycle management of Abelcet.

We manufacture Abelcet in the U.S.

### **4) *Adagen***

Adagen is a PEGylated bovine adenosine deaminase enzyme (ADA) used to treat patients afflicted with a type of Severe Combined Immunodeficiency Disease, or SCID, also known as the Bubble Boy Disease, which is caused by the chronic deficiency of ADA. We received U.S. marketing approval from the FDA for Adagen in March 1990. Adagen represents the first successful application of enzyme replacement therapy for an inherited disease. SCID results in children being born without fully functioning immune systems, leaving them susceptible to a wide range of infectious diseases. Currently, the only alternative to Adagen treatment is a well-matched bone marrow transplant. Injections of unmodified ADA are not effective because of its short circulating life (less than 30 minutes) and the potential for immunogenic reactions to a bovine-sourced enzyme. The attachment of PEG to ADA allows ADA to achieve its full therapeutic effect by increasing its circulating life and masking the ADA to avoid immunogenic reactions.

We are required to maintain a permit from the U.S. Department of Agriculture (USDA) in order to import ADA. This permit must be renewed on an annual basis. As of October 5, 2006, the USDA issued a permit to us to import ADA through October 5, 2007.

We are marketing Adagen on a worldwide basis. We utilize independent distributors in certain territories including the U.S., Europe and Australia. As of December 31, 2006, approximately 90 patients in 16 countries are receiving Adagen therapy. We believe some newborns with ADA-deficient SCID go undiagnosed and we are therefore focusing our marketing efforts for Adagen on new patient identification.

We manufacture Adagen in the U.S.

## **ROYALTIES SEGMENT**

An important source of our revenue is derived from royalties that we receive on sales of marketed products that utilize our proprietary technology. Currently, we are receiving royalties on three marketed products that are successfully utilizing our proprietary PEGylation platform, namely PEG-INTRON, Pegasys, and Macugen, with PEG-INTRON being the largest source of our royalty income.

<b>Product</b>	<b>Indication</b>	<b>Company</b>
PEG-INTRON (peginterferon alfa-2b)	chronic hepatitis C	Schering-Plough Corporation
Macugen (pegaptanib sodium injection)	neovascular (wet) age-related macular degeneration	OSI Pharmaceuticals, Inc. and Pfizer Inc.
Pegasys (Peginterferon alfa-2a)	hepatitis C	Hoffmann-La Roche

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PEG-INTRON is a PEG-enhanced version of Schering-Plough's alpha interferon product, INTRON<sup>®</sup> A, which is used both as a monotherapy and in combination with REBETOL<sup>®</sup> (ribavirin) capsules for the treatment of chronic hepatitis C. Under our license agreement with Schering-Plough, Schering-Plough holds an exclusive worldwide license to PEG-INTRON. We continue to receive royalties on Schering-Plough's worldwide sales of PEG-INTRON. Schering-Plough is responsible for all manufacturing, marketing, and development activities for PEG-INTRON. We designed PEG-INTRON to allow for less frequent dosing and to yield greater efficacy, as compared to INTRON A. PEG-INTRON is marketed worldwide by Schering-Plough and its affiliates. In December 2004, Schering-Plough's subsidiary, Schering-Plough K.K., launched PEG-INTRON and REBETOL combination therapy in Japan. At that time, PEG-INTRON and REBETOL was the only PEGylated interferon-based combination therapy available in Japan, where an estimated one to two million persons are chronically infected with hepatitis C. In January 2007, Hoffman-La Roche announced that it received approval for its competing PEGylated interferon-based combination therapy, Copegus (ribavirin) plus Pegasys (peginterferon alfa-2a (40KD)), following fast-track review by the Japanese regulatory agency.

PEG-INTRON is being evaluated in a number of ongoing clinical studies:

1) *IDEAL Study* In January 2004, Schering-Plough began recruiting patients in the IDEAL study, which will directly compare PEG-INTRON in combination with REBETOL versus Pegasys in combination with COPEGUS in 2,880 patients in the U.S. Final results of the IDEAL study are expected in 2007.

2) *COPILOT Study* PEG-INTRON is being evaluated for use as long-term maintenance monotherapy in cirrhotic patients who have failed previous treatment.

3) *ENDURE Study* In January 2006, Schering-Plough announced that it was initiating a large multinational clinical trial, to evaluate the use of low-dose PEG-INTRON maintenance monotherapy in preventing or delaying hepatitis disease progression.

4) *PROTECT Study* In May 2006, Schering-Plough announced the initiation of a large multicenter clinical trial in the United States to evaluate the safety and efficacy of PEG-INTRON and REBETOL combination therapy in liver transplant recipients with recurrent hepatitis C virus infection. The trial is targeted to enroll 125 patients in the U.S.

5) *EPIC3 Study* In October 2006, Schering-Plough reported data from EPIC3, a large ongoing clinical study, showing that retreatment with PEG-INTRON and REBETOL combination therapy can result in sustained virologic response (SVR) in patients with chronic hepatitis C who failed previous treatment with any alpha interferon-based combination therapy, including peg interferon regimens.

6) *Finally*, PEG-INTRON is being evaluated in several investigator-sponsored trials as a potential treatment for various cancers, including a Phase III study for high risk malignant melanoma and several earlier stage clinical trials for other oncology indications.

We have out-licensed our proprietary PEG and single chain antibody, or SCA, technologies on our own and through partnerships with Nektar Therapeutics, Inc. (Nektar) and Micromet AG (Micromet). Effective January 2007, we terminated our agreement with Nektar. Under the original 2002 agreement with Nektar, Nektar had the lead role in granting sublicenses for certain of our PEG patents and we receive royalties on sales of any approved product for which a sublicense has been granted. While we will continue to receive royalties on sales of products already on the market, or those for which sublicenses were previously granted, Nektar will only have the right to grant any additional sublicenses to a limited class of our PEG technology. We have the right to use or grant licenses to all of our PEG technology for our own proprietary products or those we may develop with co-commercialization partners. Nektar has notified us of five third-party products for which it has granted sublicenses to our PEG technology:



Hoffmann-La Roche's Pegasys; OSI Pharmaceuticals (OSI) Macugen (pegaptanib sodium injection); Cimzia (formerly CDP870), owned by UCB, a Belgium-based biopharmaceutical company; Affymax and Takeda Pharmaceutical's Hematide; and an undisclosed product of Pfizer's that is in early-stage clinical development. Pegasys is currently being marketed for the treatment of hepatitis C and Macugen is currently being marketed through a collaboration between OSI and Pfizer for the treatment of neovascular (wet) age-related macular degeneration, an eye disease associated with aging that destroys central vision. Cimzia, an anti-TNF-alpha PEGylated antibody fragment, has been submitted to the FDA for regulatory approval for Crohn's disease, and is

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currently in Phase III clinical trials for the treatment of rheumatoid arthritis. In December 2006, UCB announced positive top-line results for signs and symptoms from two phase 3 studies for Cimzia in the treatment of rheumatoid arthritis. In both the RAPID 1 (027) and RAPID 2 (050) studies Cimzia, in combination with methotrexate, demonstrated superiority to placebo, and a statistically significant improvement in the signs and symptoms of rheumatoid arthritis as measured by all American College of Rheumatology (ACR) scores: ACR20, 50, and 70. Further details on the results from the RAPID studies, including data on the prevention of structural damage, will be released during the first quarter of 2007. Additionally, in July 2006, UCB announced positive Phase II results from their study of Cimzia in the treatment of patients with psoriasis. Hematide is a synthetic peptide-based erythropoiesis-stimulating agent being evaluated by Affymax and Takeda Pharmaceutical in two phase 2 clinical trials for the treatment of anemia associated with chronic kidney disease and in anemic cancer patients undergoing chemotherapy. In 2004 Nektar entered into a licensing agreement for Hematide, a synthetic peptide-based erythropoiesis-stimulating agent (ESA), with Affymax, Inc. Hematide is currently in phase 2 trials for the treatment of anemia associated with chronic kidney disease and in anemic cancer patients undergoing chemotherapy. In September 2006, Affymax published clinical data from its Phase I trial of Hematide in the September 15, 2006 issue of the scientific journal Blood. The study results demonstrated that single doses of Hematide resulted in dose-dependent increases in circulating reticulocytes in normal healthy volunteers and in a clinically and statistically significant increase in red blood cells and hemoglobin from baseline, which was sustained for at least one month.

We receive a royalty from Medac, a private company based in Germany, on sales of Oncaspar KH recorded by Medac.

## **CONTRACT MANUFACTURING SEGMENT**

We utilize a portion of our excess manufacturing capacity to provide contract manufacturing services for a number of injectable products. Currently, we manufacture Abelcet for export and MYOCET for Zeneus Pharma Ltd. (Zeneus), which in December 2005 became a subsidiary of Cephalon, Inc., and the injectable multivitamin MVI<sup>®</sup> for Mayne Pharma Limited (Mayne), a division of Hospira, Inc., at our facility in Indianapolis, Indiana. We entered into two new manufacturing agreements near the end of 2006. In our manufacture of these products, we utilize complex manufacturing processes, such as single- and dual-chamber vial filling and lipid complex formulations.

We are currently focusing on our contract manufacturing business as a means of further leveraging our manufacturing expertise and improving our overall profit margins.

## ***RESEARCH AND DEVELOPMENT***

Our internal pharmaceutical drug development programs focus on the development of novel compounds for the treatment of cancer and adjacent therapeutic areas where there is an unmet medical need. We are building a proprietary research and development pipeline both through the application of our proprietary technologies and through strategic agreements that provide access to promising product development opportunities within our therapeutic focus. We offer potential partners substantial know-how in the area of PEGylation and an experienced management team with extensive experience in researching, developing, marketing and selling pharmaceutical products, particularly for the treatment of cancer.

Our PEGylation technology, particularly our next-generation PEGylation platform that utilizes our releasable linkers has applicability for areas beyond oncology. Our research and development activities may yield data that supports developing our proprietary compounds in certain non-oncology applications. Our strategy is to utilize our PEGylation platform for internal discovery and development programs first, and then explore additional opportunities for PEGylation outside of the oncology market through strategic alliances.

We believe by complementing our internal research and development efforts with a disciplined strategy of entering into collaborative relationships we will build a valuable pipeline of diversified pharmaceuticals to drive sustainable revenue growth.

We seek new clinical products from internal and external sources. Our internal research and development activities focus on applying our proprietary technologies, namely our PEGylation expertise, to internal product

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candidates, and developing products accessed through licensing transactions such as our agreements with NatImmune A/S and Santaris Pharma A/S (Santaris). We obtained the exclusive worldwide rights, excluding the Nordic countries, from NatImmune to develop, manufacture, market and sell recombinant human Mannose-binding Lectin (rhMBL). Mannose-binding Lectin (MBL) is a naturally occurring human plasma protein that plays a key role in the immune system's first-line defense against infections. In July 2006, we entered into a global collaboration with Santaris to co-develop and commercialize a series of innovative ribonucleic acid (RNA) antagonists based on the LNA<sup>®</sup> (locked nucleic acid) technology. We have licensed two preclinical development compounds, the HIF-1 alpha antagonist and the Survivin antagonist, and have selected six additional proprietary RNA antagonist candidates, all to be directed against novel oncology targets.

## **PROPRIETARY PRODUCTS IN DEVELOPMENT**

### ***ONCASPAR***

We are currently exploring the potential expansion of Oncaspar within the acute lymphoblastic leukemia setting, as well as in additional cancers where the L-asparaginase enzyme may play a role. For instance, there are a number of preclinical studies indicating that asparagine depletion may play an important role in treating other cancers, including pancreatic, ovarian, head and neck, and certain sub-types of non-Hodgkin's lymphoma. A number of new clinical initiatives exploring asparagine's role in these additional cancers are being evaluated.

We presented preclinical data on Oncaspar at the EORTC-NCI-AACR (European Organization for Research and Treatment of Cancer-National Cancer Institute-American Association for Cancer Research) annual meeting held November 7-10, 2006. The study evaluated the utility of Oncaspar in solid tumors and lymphomas, as well as assessed the correlation of Oncaspar activity with cellular levels of asparagine synthetase. In particular, the study examined in vitro and in vivo efficacy of Oncaspar in pancreatic, ovarian and lymphoma cells with varying expression of asparagine synthetase. According to the study:

Oncaspar displayed potent cytotoxicity against several pancreatic, ovarian, and lymphoma cell lines during in vitro studies.

The combination of Oncaspar and Gemzar<sup>®</sup> were additive in the low asparagine synthetase-expressing pancreatic model during in vivo studies; however, in the high asparagine synthetase-expressing pancreatic model, treatment with Oncaspar at various doses was ineffective.

Overall, efficacy of Oncaspar correlates with cellular asparagine synthetase in some cell lines and hence asparagine synthetase could potentially serve as a biomarker in the clinic.

On August 1, 2006 we announced that we had initiated a phase 1 clinical trial of Oncaspar to assess its safety and potential utility in the treatment of advanced solid tumors and lymphomas in combination with Gemzar<sup>®</sup> (gemcitabine HCl for Injection).

### ***PEG-SN38***

SN38 is the active metabolite of the cancer drug irinotecan, a chemotherapeutic pro-drug marketed as Camptosar<sup>®</sup> in the U.S. Camptosar is a validated topoisomerase I inhibitor. Unmodified SN38 is insoluble and can only be used to treat cancer by administering the pro-drug, Camptosar. A pro-drug is a compound that is converted into the active drug in the body. Only a small percentage of Camptosar is converted into SN38 in cancer cells and the unpredictability of conversion and metabolism in each patient may result in a variable efficacy and safety profile. Through the use of our PEGylation technology, we designed PEG-SN38 (EZN-2208), a PEGylated conjugate of

SN38, to offer therapeutic advantages over unmodified SN38 and Camptosar. EZN-2208 is designed to deliver the active drug to tumor cells without the need for conversion. The PEGylated version allows for parental delivery, increased solubility, higher exposure, and longer apparent half-life. Preclinical studies have shown that these features lead to greater efficacy over Camptosar.

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We presented preclinical data on PEG-SN38 at the EORTC-NCI-AACR annual meeting held November 7-10, 2006. The study evaluated the pharmacokinetics and therapeutic efficacy of PEG-SN38 in xenograft models of human breast, colorectal and pancreatic cancers. According to the study:

PEG-SN38 demonstrated potent in vitro cytotoxicity against several human cancer cell lines and anti-tumor activity in xenograft models of human breast, colorectal and pancreatic cancers.

Treatment with a single or multiple small doses of PEG-SN38 led to complete cures of animals in the breast cancer model.

In colorectal and pancreatic preclinical models, PEG-SN38 demonstrated significantly better therapeutic efficacy, at their respective maximum tolerated doses and equivalent dose levels, than Camptosar.

In mice, PEG-SN38 provided a long circulation half-life and exposure to the parent drug, SN38.

## ***LOCKED NUCLEIC ACID (LNA) TECHNOLOGY-BASED PROGRAMS***

In July 2006, we entered into a license and collaboration agreement with Santaris for up to eight RNA antagonists which we intend to develop. We obtained rights worldwide, other than Europe, to develop and commercialize RNA antagonists based on LNA technology directed against the HIF-1 alpha and Survivin RNA targets. Santaris will design and synthesize RNA antagonists directed against up to six additional gene targets selected by us, and we will have the right to develop and commercialize those antagonists worldwide other than Europe.

LNA Technology, developed by Santaris, is based on Locked Nucleic Acid, a proprietary synthetic analog of RNA which is fixed in the shape adopted by RNA in helical conformation. When incorporated into a short nucleic acid chain (both DNA and RNA are made up of longer chains of natural nucleic acids), the presence of LNA results in several therapeutic advantages. Because LNA resembles RNA but is more stable, LNA-containing drugs have both very high binding affinity for RNA and metabolic stability. Using the antisense principle to block the function of specific RNAs within cells and tissues, such drugs have enhanced potency and specificity and may provide improved efficacy at lower doses than comparable drugs based on alternative chemistry. As a result, RNA Antagonists comprised of LNA have been demonstrated to be 100 to 1,000 times more potent in vitro than conventional antisense compounds and also to demonstrate comparable or similar efficacy in vivo than the best siRNAs (small interfering RNAs) published to date. In particular, they can be used to switch off the synthesis of harmful proteins, thereby potentially altering disease outcomes in cancer or other serious disorders.

*HIF-1 alpha (hypoxia-inducible factor 1 alpha) Antagonist* The HIF-1 alpha antagonist is a highly-visible, well-validated target in many cancer types, including common solid tumors. HIF-1 alpha is a key regulator of a large number of genes important in cancer biology, such as angiogenesis, cell proliferation, apoptosis and cell invasion. HIF-1 alpha is low in normal cells, but reaches high intracellular concentrations in a variety of cancers and is strongly correlated with poor prognosis and resistance to therapy. Drugs targeting HIF-1 alpha thus have the potential to target multiple cancer processes. In January 2007 we announced that the FDA accepted our Investigational New Drug Application (IND) for the HIF-1 alpha antagonist and we plan to initiate a phase 1 trial in the first half of 2007.

*Survivin Antagonist* Survivin plays a vital regulatory role in both apoptosis and cell division. Survivin is heavily over-expressed in many cancers and in newly formed endothelial cells engaged in angiogenesis but almost absent in normal adult differentiated tissue. Resistance of cancer cells to radiotherapy and cytotoxic drugs (in particular microtubule interfering taxanes) is strongly correlated with expression levels of Survivin.

Clinically, Survivin expression is associated with poor prognosis, increased cancer recurrence and resistance to therapy. The Survivin antagonist is currently in preclinical development.

***RECOMBINANT HUMAN MANNANOSE-BINDING LECTIN***

In September 2005, we acquired the exclusive worldwide rights, excluding the Nordic countries, to rhMBL, a protein therapeutic being developed for the prevention and treatment of severe infections in individuals with deficient levels of MBL. MBL binds to a wide range of invading organisms including bacteria, fungi, viruses, and

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parasites and activates the lectin pathway of the complement system, an important defense mechanism of the immune system. Numerous studies have found a strong correlation between MBL deficiency and an increased susceptibility to infections in patients with a suppressed immune system, such as cancer patients undergoing treatment with chemotherapy. A number of publications have highlighted a strong correlation between MBL levels and the morbidity associated with severe infections. These studies were in a broad spectrum of diseases, including cancer and immuno-compromised disorders in both adult and pediatric populations.

In December 2004, NatImmune completed Phase I clinical trials that evaluated the safety and pharmacokinetic profile of single- and multi-dose intravenous administration of rhMBL in 28 MBL-deficient volunteers. Results from the Phase I trials demonstrated that rhMBL replacement therapy is safe and has an attractive pharmacokinetic profile. NatImmune has also completed a prospective correlation study of 255 hematological cancer patients that documented that MBL-deficient patients have a significantly higher risk of severe infections following chemotherapy compared to patients with sufficient MBL levels.

Given the broad therapeutic potential of rhMBL, we are evaluating several potential lead indications for this compound. To date, the FDA has accepted both of the INDs we submitted – one for the prevention and treatment of severe infections in cancer patients; and one for those who have undergone liver transplant surgery. Clinical Trials are now underway in multiple myeloma and post operatively in liver transplant surgery.

### ***OTHER RESEARCH AND DEVELOPMENT PROGRAMS***

We are conducting preclinical studies with respect to a number of PEG-enhanced compounds while simultaneously seeking new opportunities to apply our PEG technology to develop and commercialize improved versions of therapeutics of known efficacy that lack the features of a useful or effective therapeutic. Our proprietary PEG platform has broad applicability to a variety of biologic therapeutics, including proteins, peptides, enzymes, and oligonucleotides, as well as small molecules. We are exploring the role of a PEG novel linker system for targeted delivery of LNA.

### ***DISCONTINUED RESEARCH AND DEVELOPMENT PROGRAMS***

During 2005, our new management conducted a detailed strategic analysis of our research and development programs in order to redirect our research and development investments to programs that were strategically aligned with the objectives of our business, including an increasing focus on cancer and adjacent therapeutic areas. Accordingly, we have implemented more stringent internal review criteria and since July 1, 2005, we discontinued a number of research and development programs that did not meet our standard for continued investment.

In January 2006, we returned our rights to ATG-Fresenius S to Fresenius Biotech GmbH, a subsidiary of the health care company Fresenius AG. ATG-Fresenius S is a polyclonal antibody preparation used for T-lymphocyte suppression to prevent organ graft rejection in organ transplant patients.

## **PROPRIETARY TECHNOLOGIES**

### ***PEG TECHNOLOGY***

Since our inception in 1981, our core expertise has been in engineering improved versions of injectable therapeutics through the chemical attachment of polyethylene glycol or PEG. In some cases, PEGylation can render a compound therapeutically effective, where the unmodified form had only limited clinical utility. Currently, there are five marketed biologic products that utilize our proprietary PEG platform, two of which we market, Adagen and Oncaspar, and three for which we receive royalties, PEG-INTRON, Pegasys, and Macugen.



*Specific advantages of PEG include:* (i) increased efficacy, (ii) reduced dosing frequency, (iii) reduced toxicity and immunogenicity, (iv) increased drug stability, and (v) enhanced drug solubility. In addition, our PEG platform is further distinguished by (i) demonstrated safety and tolerability, (ii) established clinical and commercial benefits, (iii) broad applicability to a variety of macromolecules or biologic therapeutics, including proteins, peptides, enzymes, and oligonucleotides, as well as small molecules, and (iv) proven commercial scale-up capability.

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We continue to develop our Customized Linker Technology™, which utilizes linkers designed to release the native molecule at a controlled rate. The customized linkers expand the utility of our existing PEGylation technology. This technology offers a choice of releasable or permanent linkages to match each drug's requirements. It improves the pharmacokinetic and pharmacodynamic profile of a drug.

We have also developed an intellectual property estate for a next-generation PEG platform that utilizes releasable linkers designed to release the native molecule at a pre-defined rate. We believe we are at the forefront of this area of PEGylation research. This platform may play an important role in enhancing the long-standing benefits of PEG to include additional classes of compounds where traditional permanent linkers are not feasible. We are also combining our PEGylation platform with complementary drug delivery technologies. For instance, we can combine our proprietary single-chain antibody platform (discussed below) with novel PEG chemistries to engineer targeted therapeutics with multiple domains, such as a targeting function (e.g. antibody) and a therapeutic function (e.g. chemotherapy). The novel attributes of customized PEG linkers may offer superior therapeutic advantages, including increased activity and substantially reduced side effects, when compared to traditional stable linkers.

Through the customized attachment of PEG, that covers the spectrum of stable and customized releasable linkers, we can potentially overcome the pharmacologic limitations for a broad universe of molecules and generate compounds with substantially enhanced therapeutic value over their unmodified forms.

We are currently investigating numerous proprietary clinical development opportunities for PEG-enhanced compounds. In addition, we are simultaneously augmenting our internal initiatives through the evaluation of PEG product development collaborations.

## ***ANTIBODY ENGINEERING***

Our research and development activities also include utilizing our single-chain antibody, or SCA, expertise as a tool for developing targeted therapeutics. Antibodies are proteins produced by the body's immune system in response to the presence of antigens, such as bacteria, viruses or other disease causing agents. Antibodies of identical molecular structure that bind to a specific target are called monoclonal antibodies. Our technological expertise includes antibody engineering utilizing our proprietary SCA technology. SCAs are genetically engineered antibodies that incorporate only the antigen binding domains of an antibody. Thus, SCAs have the binding specificity and affinity of monoclonal antibodies; however, in their native form they are only one-fifth to one-sixth the size of a monoclonal. The small size of SCAs typically gives them shorter half-lives than monoclonal antibodies, making them better suited for use in patients with cancer or in other indications where the large size of a monoclonal antibody would inhibit the compound from reaching the area of potential therapeutic activity. In addition, SCAs are a well established discovery format-of-choice in generating antibodies from phage or yeast display libraries.

## **SALES AND MARKETING**

We have a sales and marketing team that includes a hospital-based sales force that markets Abelcet and a specialty oncology sales force that markets Oncaspar and DepoCyt in the United States. We have provided exclusive marketing rights to Schering-Plough for PEG-INTRON worldwide and to Medac for Oncaspar in most of Europe and parts of Asia. Our marketing strategies do not incorporate the use of any significant direct-to-consumer advertising.

Abelcet is utilized in the U.S. and Canada by hospitals, clinics and alternate care sites that treat patients with invasive fungal infections, and is sold primarily to drug wholesalers who, in turn, sell the product to hospitals and certain other third parties. We maintain contracts with a majority of our customers which allows those customers to purchase product directly from wholesalers and receive the contracted price generally based on annual purchase volumes.

We market Oncaspar and DepoCyt in United States through our specialty oncology sales force to hospital oncology centers, oncology clinics, and oncology physicians. We market Adagen on a worldwide basis. We utilize independent distributors or specialty pharmacies in certain territories, including the U.S., Europe and Australia.

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**MANUFACTURING AND RAW MATERIALS**

In the manufacture of Abelcet, we combine amphotericin B with DMPC and DMPG (two lipid materials) to produce an injectable lipid complex formulation of amphotericin B. We currently have two suppliers of amphotericin B, Bristol-Myers Squibb (BMS) and Alpharma A.p.S. Our supply agreement with BMS terminated on March 1, 2006 and we do not have a supply agreement with Alpharma. We are negotiating long-term supply agreements with our suppliers. We are currently still receiving supply of amphotericin B from BMS and Alpharma. Additionally, we are seeking to qualify at least one additional source of supply.

In the manufacture of Adagen and Oncaspar, we combine activated forms of PEG with unmodified proteins (ADA for Adagen and L-asparaginase for Oncaspar). We have supply agreements with Ovation Pharmaceuticals, Inc. and Kyowa Hakko to produce the unmodified forms of L-asparaginase, the active ingredient used in the production of Oncaspar. Our agreement with Ovation Pharmaceuticals, Inc. provides for Ovation to supply L-asparaginase to us through 2009. We have committed to effectuate a technology transfer of the cell line and manufacturing of the L-asparaginase to our own supplier by December 31, 2009, and then supply L-asparaginase back to Ovation during the years 2010-2012.

We purchase the unmodified adenosine deaminase enzyme used in the manufacturing of Adagen from Roche Diagnostics. Roche Diagnostics, which is based in Germany is the only FDA-approved supplier of the adenosine deaminase enzyme, or ADA, used in Adagen. Our ADA supply agreement with Roche Diagnostics terminated in 2004, although we are still receiving our supply of ADA from them. We are currently seeking to develop a recombinant ADA as an alternative to the naturally-derived bovine product. This is a difficult and expensive undertaking as to which success cannot be assured. Roche Diagnostics continues to supply us with our requirements of ADA and indicated when they terminated the supply agreement that they will continue to do so for a reasonable period of time as we work to develop another source of ADA.

We do not have a long-term supply agreement for the raw polyethylene glycol material that we use in the manufacturing of our PEG products or the unmodified protein used in Adagen. We believe we maintain a level of inventory that should provide us sufficient time to find an alternate supplier, in the event it becomes necessary, without materially disrupting our business. We have identified and are in the process of qualifying a second supplier.

Adagen and Oncaspar use our early PEG technology, which is not as advanced as the PEG technology used in PEG-INTRON or our products under development. Due, in part, to certain limitations of using our earlier PEG technology, we have had and will likely continue to have certain manufacturing problems with Adagen and Oncaspar.

Manufacturing and stability problems have required us to implement voluntary recalls or market withdrawals for certain batches of Oncaspar periodically since 2002 and as recently as the fourth quarter of 2006.

The FDA and the Medicines and Healthcare products Regulatory Agency or MHRA, the government agency responsible for medicines and medical devices in the United Kingdom, have, in the past, conducted follow-up inspections as well as routine inspections of our manufacturing facilities related to Abelcet, Oncaspar and Adagen. Following certain of these inspections, the FDA has issued Form 483 reports citing deviations from Current Good Manufacturing Practices (cGMP). We received a Form 483 in August 2005 for our Indianapolis facility and in January 2006, for our South Plainfield facility. We responded to the inspection observations and all issues were cleared and approved. In January 2007, the FDA inspected our South Plainfield facility and no Form 483 was issued.

**DEVELOPMENT AND COMMERCIALIZATION AGREEMENTS**

***SANTARIS PHARMA A/S COLLABORATION***

In July 2006, we entered into a license and collaboration agreement with Santaris for up to eight RNA antagonists. We obtained rights worldwide, other than Europe, to develop and commercialize RNA antagonists directed against the HIF-1 alpha and Survivin RNA targets. Santaris will design and synthesize RNA antagonists directed against up to six additional gene targets selected by us, and we will have the right to develop and commercialize those antagonists worldwide, other than Europe. We made an initial payment of \$8.0 million to Santaris in August 2006 and an additional \$3.0 million in November 2006. As of December 31, 2006, we had

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\$5.0 million relating to the achievement of a license milestone included in accounts payable. We will be responsible for making additional payments upon the successful completion of certain compound synthesis and selection, clinical development and regulatory milestones. Santaris is also eligible to receive royalties from any future product sales of products based on the licensed antagonists. Santaris retains the full right to develop and commercialize products developed under the collaboration in Europe.

### ***SCHERING-PLOUGH AGREEMENT***

Our PEG technology was used to develop an improved version of Schering-Plough's product INTRON A. Schering-Plough is responsible for marketing and manufacturing the product, PEG-INTRON, worldwide on an exclusive basis and we receive royalties on worldwide sales of PEG-INTRON for all indications. Schering-Plough's obligation to pay us royalties on sales of PEG-INTRON terminates, on a country-by-country basis, upon the later of the date the last patent to contain a claim covering PEG-INTRON expires in the country or 15 years after the first commercial sale of PEG-INTRON in such country. Currently, expirations are expected to occur in 2016 in the U.S., 2015 in Europe and 2019 in Japan. The royalty percentage to which we are entitled will be lower in any country where a PEGylated alpha-interferon product is being marketed by a third party in competition with PEG-INTRON where such third party is not Hoffmann-La Roche.

We do not supply Schering-Plough with PEG-INTRON or any other materials and our agreement with Schering-Plough does not obligate Schering-Plough to purchase or sell specified quantities of any product.

### ***SANOFI-AVENTIS LICENSE AGREEMENTS***

During 2002, we amended our license agreement with Sanofi-Aventis to reacquire the rights to market and distribute Oncaspar in the U.S., Mexico, Canada and most of the Asia/Pacific region. In return for the marketing and distribution rights, we paid Sanofi-Aventis \$15.0 million and were also obligated to pay a 25% royalty on net sales of Oncaspar in the U.S. and Canada through 2014. Following the expiration of the royalty obligations in 2014, all rights to Oncaspar will revert back to us, unless the agreement is terminated earlier because we fail to make royalty payments or cease to sell Oncaspar.

The amended license agreement prohibits Sanofi-Aventis from making, using or selling an asparaginase product in the U.S. or a competing PEG-asparaginase product anywhere in the world until the later of the expiration of the agreement or, if the agreement is terminated earlier, five years after termination. If we cease to distribute Oncaspar or if we fail to make the required royalty payments, Sanofi-Aventis has the option to distribute the product in the territories.

In October 2005, we further amended our license agreement with Sanofi-Aventis for Oncaspar. The amendment became effective in January 2006 and included a significant reduction in our royalty rate, with a single-digit royalty percentage now payable by us only on those aggregate annual sales of Oncaspar in the United States and Canada that are in excess of \$25.0 million. In consideration for the amendment, we made an upfront cash payment of \$35.0 million to Sanofi-Aventis in January 2006. We are obligated to make royalty payments, if any, through June 30, 2014, at which time all of our royalty obligations will cease.

### ***MEDAC LICENSE AGREEMENT***

In January 2002, we renewed an exclusive license to Medac, to sell Oncaspar and any PEG-asparaginase product developed by us or Medac during the term of the agreement in most of Europe and parts of Asia. Our supply agreement with Medac provides for Medac to purchase Oncaspar from us at certain established prices and meet certain minimum purchase requirements. Medac is responsible for obtaining additional approvals and indications in

the licensed territories beyond the currently approved indication in Germany. The agreement was for five years and automatically renewed as of January 1, 2007 for an additional five years through December 31, 2011. Thereafter, the agreement will automatically renew for an additional two years unless either party provides written notice of its intent to terminate the agreement at least 12 months prior to the scheduled expiration date. Following the expiration or termination of the agreement, all rights granted to Medac will revert back to us.

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***MICROMET ALLIANCE***

Under our cross-license agreement and marketing agreement with Micromet, Micromet is the exclusive marketer of the two companies' combined intellectual property estate in the field of SCA technology. Any resulting revenues from the license agreements executed by Micromet will be shared equally by the two companies. In 2006 we recognized royalty revenue of \$673 thousand related to our share of revenues from Micromet's licensing activities associated with this agreement.

***NATIMMUNE A/S LICENSE AGREEMENT***

In September 2005, we entered into a license agreement with NatImmune A/S (NatImmune) for NatImmune's lead development compound, recombinant human Mannose-binding Lectin (rhMBL), a protein therapeutic under development for the prevention of severe infections in MBL-deficient individuals undergoing chemotherapy. Under the agreement, we received exclusive worldwide rights, excluding the Nordic countries, and are responsible for the development, manufacture, and marketing of rhMBL. The \$10.0 million upfront cost of the license agreement was charged to acquired in-process research and development during the year ended December 31, 2005. During 2006, we paid NatImmune \$2.1 million for license milestones and will be responsible for making additional payments upon the successful completion of certain clinical development, regulatory, and sales-based milestones. NatImmune is also eligible to receive royalties from any future product sales of rhMBL by Enzon and retains certain rights to develop a non-systemic formulation of rhMBL for topical administration.

***NEKTAR ALLIANCE***

In January 2002, we entered into a PEG technology licensing agreement with Nektar under which we granted Nektar the right to grant sub-licenses for a portion of our PEG technology to third parties. However, on September 7, 2006, we gave notice to Nektar of our intention not to renew the provisions of our agreement with them that give Nektar the right to sub-license a portion of our PEG technology and patents to third-parties. This right terminated in January 2007 and will not affect any existing sub-licenses granted by Nektar. Nektar will only continue to have the right to sub-license a limited class of our PEG technology and we will receive a royalty or a share of Nektar's profits for any products that utilize our patented PEG technology.

Currently, Nektar has notified us of five third-party products for which it has granted sublicenses to our PEG technology, Hoffmann-La Roche's Pegasys (peginterferon alfa-2a), OSI's Macugen (pegaptanib sodium injection), UCB's Cimzia® (certolizumab pegol, CDP870), Affymax and Takeda Pharmaceutical's Hematide and an undisclosed product of Pfizer's. Pegasys is currently being marketed for the treatment of hepatitis C and Macugen is currently being marketed through a partnership between OSI and Pfizer for the treatment of neovascular (wet) age-related macular degeneration, an eye disease associated with aging that destroys central vision. Cimzia, a PEGylated anti-TNF-alpha antibody fragment, is currently in Phase III development for the treatment of rheumatoid arthritis and Crohn's disease. Hematide, a synthetic peptide-based erythropoiesis-stimulating agent is in two Phase II clinical trials for the treatment of anemia associated with chronic kidney disease and in anemic cancer patients undergoing chemotherapy. We retain all rights to use or sub-license all of our PEG technology for our own proprietary products or those we may develop with co-commercialization partners.

***SKYEPHARMA AGREEMENTS***

In December 2002, we entered into a strategic alliance with SkyePharma PLC (SkyePharma), under which we licensed the U.S. and Canadian rights to SkyePharma's DepoCyt, an injectable chemotherapeutic approved for the treatment of patients with lymphomatous meningitis. Under the terms of the agreement, we paid SkyePharma a license



fee of \$12.0 million. SkyePharma manufactures DepoCyt and we purchase product at a price equal to 35% of our net sales, which percentage can be reduced should a defined sales target be exceeded. We recorded the \$12.0 million license fee as an intangible asset that is being amortized over a ten year period.

This alliance also included a broad technology access agreement, under which the two companies may draw upon their combined drug delivery technology and expertise to jointly develop up to three products for future commercialization. These products will be based on SkyePharma's proprietary platforms in the areas of oral, injectable and topical drug delivery, supported by technology to enhance drug solubility and our proprietary PEG

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modification technology, for which we received a \$3.5 million technology access fee. SkyePharma will receive a \$2.0 million milestone payment for each product based on its own proprietary technology that enters Phase II clinical development. Certain research and development costs related to the technology alliance will be shared equally, as will future revenues generated from the commercialization of any jointly-developed products.

Under this alliance, we are required to purchase minimum levels of DepoCyt finished goods equal to \$5.0 million in net sales for each calendar year (Minimum Annual Purchases) through the remaining term of the agreement. SkyePharma is also entitled to a milestone payment of \$5.0 million if our sales of the product exceed a \$17.5 million annual run rate for four consecutive quarters and an additional milestone payment of \$5.0 million if our sales exceed an annualized run rate of \$25.0 million for four consecutive quarters. For the year ended December 31, 2006, net sales of DepoCyt were approximately \$8.3 million. We are also responsible for a milestone payment if the product receives approval for all neoplastic meningitis of between \$5.0 million and \$7.5 million depending on the timing of approval.

Our license is for an initial term of ten years and is automatically renewable for successive two-year terms thereafter. SkyePharma will be entitled to terminate the agreement early if we fail to satisfy our Minimum Annual Purchases. If a therapeutically equivalent generic product enters our markets and DepoCyt's market share decreases, we will enter into good faith discussions in an attempt to agree on a reduction in our payment obligations to SkyePharma and a fair allocation of the economic burdens resulting from the market entry of the generic product. If we are unable to reach an agreement within 30 days, then either party may terminate the agreement, which termination will be effective 180 days after giving notice thereof. After termination of the agreement, we will have no further obligation to each other, except the fulfillment of obligations that accrued prior thereto (e.g., deliveries, payments, etc.). In addition, for six months after any such termination, we will have the right to distribute any quantity of product we purchased from SkyePharma prior to termination.

## ***ZENEUS MANUFACTURING AGREEMENT***

Zeneus Pharma, Ltd. (Zeneus), a wholly owned subsidiary of Cephalon, Inc., owns the right to market Abelcet in any markets outside of the U.S., Canada and Japan. Our supply agreement with Zeneus requires that we supply Zeneus with Abelcet and MYOCET through November 21, 2011 and November 21, 2009, respectively, at which times the agreement will continue unless terminated by either party. We supply these products on a cost-plus basis.

## **PATENTS AND INTELLECTUAL PROPERTY RIGHTS**

Patents are very important to us in establishing the proprietary rights to the products we have developed or licensed. Our new executive management team has been reinforcing our organizational commitment to intellectual property. The patent position of pharmaceutical or biotechnology companies can be uncertain and involve complex legal, scientific and factual questions. If our intellectual property positions are challenged, invalidated or circumvented, or if we fail to prevail in potential future intellectual property litigation, our business could be adversely affected. We have an extensive portfolio of issued U.S. patents and patent applications, many of which have foreign counterparts. These patents, if extensions are not granted, are expected to expire beginning in 2007 through 2023. Under our license agreements, we have access to large portions of Micromet's patent estates, as well as a small number of individually licensed patents. Of the patents owned or licensed by us, 7 relate to PEG-INTRON, 17 relate to Abelcet, and 3 relate to DepoCyt. Although we believe that our patents provide adequate protection for the conduct of our business, we cannot assure you that such patents:

will be of substantial protection or commercial benefit to us,

will afford us adequate protection from competing products, or

will not be challenged or declared invalid.

We also cannot assure you that additional U.S. patents or foreign patent equivalents will be issued to us.

Patents for individual products extend for varying periods according to the date of patent filing or grant and the legal term of patents in the various countries where patent protection is obtained. The actual protection afforded by a

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patent, which can vary from country to country, depends upon the type of patent, the scope of its coverage and the availability of legal remedies in the country.

The expiration of a product patent or loss of patent protection resulting from a legal challenge normally results in significant competition from generic products against the covered product and, particularly in the U.S., can result in a significant reduction in sales of the pioneer product. In some cases, however, we can continue to obtain commercial benefits from:

product manufacturing trade secrets;

patents on uses for products;

patents on processes and intermediates for the economical manufacture of the active ingredients;

patents for special formulations of the product or delivery mechanisms and conversion of the active ingredient to OTC products.

The effect of product patent expiration or loss also depends upon:

the nature of the market and the position of the product in it;

the growth of the market;

the complexities and economics of manufacture of the product; and

the requirements of generic drug laws.

The patent covering our original PEG technology, which we had licensed from Research Corporation Technologies, Inc., contained broad claims covering the attachment of PEG to polypeptides. However, this U.S. patent and its corresponding foreign patents have expired. Based upon the expiration of the Research Corporation patent, other parties may make, use, or sell products covered by the claims of the Research Corporation patent, subject to other patents, including those that we hold. We have obtained and intend to continue to pursue patents with claims covering improved methods of attaching or linking PEG to therapeutic compounds. We also have obtained patents relating to the specific composition of the PEG-modified compounds that we have identified or created. We will continue to seek such patents as we develop additional PEG-enhanced products. We cannot assure you that we will be able to prevent infringement by unauthorized third parties or that competitors will not develop competitive products outside the protection that may be afforded by our patents.

We are aware that others have also filed patent applications and have been granted patents in the U.S. and other countries with respect to the application of PEG to proteins and other compounds. Owners of any such patents may seek to prevent us or our collaborators from making, using or selling our products.

In the field of SCA proteins, we have several U.S. and foreign patents and pending patent applications, including a patent granted in August 1990 covering the genes needed to encode SCA proteins.

Through our acquisition of Abelcet, we acquired several U.S., Canadian, and Japanese patents claiming the use and manufacture of Abelcet.

We have obtained licenses from various parties that we deem to be necessary or desirable for the manufacture, use, or sale of our products. These licenses generally require us to pay royalties to the parties on product sales. In addition, other companies have filed patent applications or have been granted patents in areas of interest to us. There can be no assurance that any licenses required under such patents will be available to us on acceptable terms or at all.

We sell our products under trademarks that we consider in the aggregate to be of material importance. Trademark protection continues in some countries for as long as the mark is used and, in other countries, for as long as it is registered. Registrations generally are for fixed, but renewable, terms.

#### **GOVERNMENT REGULATION**

The FDA and comparable regulatory agencies in state and local jurisdictions and in foreign countries impose substantial requirements on the clinical development, manufacture, and marketing of pharmaceutical products.

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These agencies and other federal, state and local entities regulate research and development activities and the inspection, testing, manufacture, quality assurance, safety, effectiveness, labeling, packaging, storage, record-keeping, approval, and promotion of our products. All of our products will require regulatory approval before commercialization. In particular, therapeutic products for human use are subject to rigorous preclinical and clinical testing and other requirements of the Federal Food, Drug, and Cosmetic Act and the Public Health Service Act, implemented by the FDA, as well as similar statutory and regulatory requirements of foreign countries. Obtaining these marketing approvals and subsequently complying with ongoing statutory and regulatory requirements is costly and time consuming. Any failure by us or our collaborators, licensors or licensees to obtain, or any delay in obtaining, regulatory approval or in complying with post-approval requirements, could adversely affect the marketing and sale of products that we are developing and our ability to receive product or royalty revenues.

The steps required before a new drug or biological product may be distributed commercially in the U.S. generally include:

conducting appropriate preclinical laboratory evaluations of the product's chemistry, formulation and stability, and animal studies to assess the potential safety and efficacy of the product,

submitting the results of these evaluations and tests to the FDA, along with manufacturing information, analytical data and clinical investigational plan, in an IND,

obtain IND approval from the FDA, which may require the resolution of any safety or regulatory concerns of the FDA,

obtaining approval of Institutional Review Boards or IRBs, prior to introduce the drug or biological product into humans in clinical studies,

conducting adequate and well-controlled human clinical trials that establish the safety and efficacy of the drug or biological product candidate for the intended use, in the following three typically sequential, stages:

*Phase I.* The drug or biologic is initially introduced into healthy human subjects or patients and tested for safety, increased dose tolerance, and possibly absorption, distribution, metabolism and excretion,

*Phase II.* The drug or biologic is studied in patients with the targeted condition to gain safety experience at the proposed dosing schedules, identify possible adverse effects and safety risks to determine the optimal dosage, and to obtain initial information on effectiveness of the drug candidate,

*Phase III.* The drug or biologic is studied in an expanded patient population at multiple clinical study sites determine primary efficacy and safety endpoints predetermined at the start of the study,

submitting the results of preliminary research, preclinical studies, and clinical studies as well as chemistry, manufacturing and control information on the drug or biological product to the FDA in a New Drug Application or NDA, for a drug product, or a Biologics License Application or BLA, for a biological product, and

obtaining FDA approval of the NDA or BLA prior to any commercial sale or shipment of the drug or biological product.

An NDA or BLA must contain, among other things, data derived from non-clinical laboratory and clinical studies which demonstrate that the product meets prescribed standards of safety, purity and potency, and a full description of

manufacturing methods. Biological or drug products may not be marketed in the U.S. until approval by the FDA of an NDA or BLA is received.

The approval process can take a number of years and often requires substantial financial resources. The results of preclinical studies and initial clinical trials are not necessarily predictive of the results from large-scale clinical trials, and clinical trials may be subject to additional costs, delays or modifications due to a number of factors, including the difficulty in obtaining enough patients, clinical investigators, drug supply, or financial support. The FDA has issued regulations intended to accelerate the approval process for the development, evaluation and marketing of new therapeutic products intended to treat serious or life-threatening illnesses that provide meaningful therapeutic benefit to patients over existing therapies. If applicable, this procedure may shorten the traditional

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product development process in the U.S. Similarly, products that represent a significant improvement over existing therapies may be eligible for priority review with a target approval time of six months. Nonetheless, approval may be denied or delayed by the FDA or additional trials may be required. The FDA also may require testing and surveillance programs to monitor the effect of approved products that have been commercialized, and the agency has the power to prevent or limit further marketing of a product based on the results of these post-marketing programs. Upon approval, a drug product or biological product may be marketed only in those dosage forms and for those indications approved in the NDA or BLA, although information about off-label indications may be disseminated in narrowly defined situations.

In addition to obtaining FDA approval for each indication for which the manufacturer may market the drug, each domestic drug product manufacturing establishment must register with the FDA, list its drug products with the FDA, comply with and maintain cGMP and permit and pass inspections by the FDA and other regulatory authorities. Moreover, the submission of applications for approval may require the preparation of large-scale production batches that can not be used commercially and additional time to complete manufacturing stability studies. Foreign establishments manufacturing drug products for distribution in the U.S. also must list their products with the FDA and comply with cGMP. They also are subject to periodic inspection by the FDA or by local authorities under agreement with the FDA.

Any products manufactured or distributed by us pursuant to FDA approvals are subject to extensive continuing regulation by the FDA, including record-keeping requirements and a requirement to report adverse experiences with the drug. In addition to continued compliance with standard regulatory requirements, the FDA also may require post-marketing testing and surveillance to monitor the safety and efficacy of the marketed product. Adverse experiences with the product must be reported to the FDA. Product approvals may be withdrawn if compliance with regulatory requirements is not maintained or if problems concerning safety or efficacy of the product are discovered following approval.

The Federal Food, Drug, and Cosmetic Act also mandates that drug products be manufactured consistent with cGMP. In complying with the FDA's regulations on cGMP, manufacturers must continue to spend time, money and effort in production, record-keeping, quality control, quality assurance, and auditing to ensure that the marketed product meets applicable specifications and other requirements. The FDA periodically inspects drug product manufacturing facilities to ensure compliance with cGMP. Failure to comply subjects the manufacturer to possible FDA action, such as:

- untitled/warning and warning letters,
- suspension of manufacturing,
- seizure of the product,
- voluntary recall of a product,
- injunctive action, or
- possible civil or criminal penalties.

To the extent we rely on third parties to manufacture our compounds and products, those third parties will be required to comply with cGMP as required by regulations. We have undertaken a voluntary recall of certain lots of products in the past, and future recalls and costs associated with deviations from cGMP are possible.



Even after FDA approval has been obtained, and often as a condition to expedited approval, further studies, including post-marketing studies, are typically required by the FDA. Results of post-marketing studies may limit or expand the further marketing of the products. If we propose any modifications to the product, including changes in indication, manufacturing or testing processes, manufacturing facility or labeling, an NDA or BLA supplement may be required to be submitted to and approved by the FDA.

Products manufactured in the U.S. for distribution abroad will be subject to FDA regulations regarding export, as well as to the requirements of the country to which they are shipped. These latter requirements apply to products studied in clinical trials, the submission of marketing applications, and all aspects of product manufacture and marketing. Such requirements vary significantly from country to country. As part of our strategic relationships our

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collaborators may be responsible for the foreign regulatory approval process of our products, although we may be legally liable for noncompliance.

We cannot predict the extent of government regulation that might result from future legislation or administrative action. Moreover, we anticipate that Congress, state legislatures and the private sector will continue to review and assess controls on health care spending. Any such proposed or actual changes could cause us or our collaborators to limit or eliminate spending on development projects and may otherwise impact us. We cannot predict the likelihood, nature or extent of adverse governmental regulation that might result from future legislative or administrative action, either in the U.S. or abroad. Additionally, in both domestic and foreign markets, sales of our proposed products will depend, in part, upon the availability of reimbursement from third-party payors, such as government health administration authorities, managed care providers, private health insurers and other organizations. Although Congress enacted the Medicare Prescription Drug Modernization and Improvement Act of 2003, which established a general Medicare outpatient prescription drug benefit beginning in 2006, significant uncertainty often exists as to the reimbursement status of newly approved health care products. In addition, third-party payors are increasingly challenging the price and cost-effectiveness of medical products and services. There can be no assurance that our proposed products will be considered cost-effective or that adequate third-party reimbursement will be available to enable us to maintain price levels sufficient to realize an appropriate return on our investment in product research and development.

We are also subject to federal and state laws regulating our relationships with physicians, hospitals, third party payors of health care, and other customers. The federal anti-kickback statute, for example, prohibits the willful and knowing payment of any amount to another party with the intent to induce the other party to make referrals for health care services or items payable under any federal health care program. In recent years the federal government has substantially increased enforcement and scrutiny of pharmaceutical manufacturers with regard to the anti-kickback statute and other federal fraud and abuse rules.

PEG-INTRON was approved in the European Union, the U.S., and Japan for the treatment of hepatitis C in May 2000, January 2001 and December 2004, respectively. Abelcet was approved in the U.S. in November 1995 and in Canada in September 1997. Oncaspar was approved for marketing in the U.S. in February 1994 in Germany in November 1994, and in Canada under a Clinical Trial Agreement in December 1997 for patients with acute lymphoblastic leukemia who are hypersensitive to native forms of L-asparaginase, and in Russia in April 1993 for therapeutic use in a broad range of cancers. Oncaspar was approved in the U.S. for first-line treatment for patients with ALL in July 2006. Adagen was approved by the FDA in March 1990. DepoCyt received accelerated U.S. approval in April 1999. Except for these approvals, none of our other products have been approved for sale and use in humans in the U.S. or elsewhere.

With respect to patented products, delays imposed by the government approval process may materially reduce the period during which we will have the exclusive right to exploit them.

Our operations are also subject to federal, state and local environmental laws and regulations concerning, among other things, the generation, handling, storage, transportation, treatment and disposal of hazardous, toxic and radioactive substances and the discharge of pollutants into the air and water. Environmental permits and controls are required for some of our operations and these permits are subject to modification, renewal and revocation by the issuing authorities. We believe that our facilities are in substantial compliance with our permits and environmental laws and regulations and do not believe that future compliance with current environmental laws will have a material adverse effect on our business, financial condition or results of operations. If, however, we were to become liable for an accident, or if we were to suffer an extended facility shutdown as a result of such contamination, we could incur significant costs, damages and penalties that could harm our business.

## COMPETITION

### General

Competition in the biopharmaceutical industry is intense and based to a significant degree on scientific and technological factors. These factors include but are not limited to the availability of patent and other protection of technology and products, the ability to commercialize products and technological developments, the ability to

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obtain governmental approval for testing, manufacturing and marketing of products, and the ability to enter into licensing and similar arrangements to facilitate the development of products and meet other business objectives. We and our marketing partners compete with specialized biopharmaceutical firms and large pharmaceutical companies in North America, Europe and elsewhere, with respect to the licensing of and research and development of product candidates, as well as the commercialization of approved products. These companies, as well as academic institutions, governmental agencies and private research organizations, also compete with us in recruiting and retaining highly qualified scientific personnel and consultants. Many of the companies we compete with are larger than us and have substantially greater resources. Certain of these companies, especially Merck and Pfizer, are able to compete effectively with us largely by virtue of their superior resources and the market's familiarity with their brand names regardless of the technical advantages or disadvantages of their products.

## **Products**

### *Abelcet*

The intravenous or IV antifungal market in which Abelcet competes has been facing increasingly competitive market conditions. The products used to treat fungal infections are classified into four classes of drugs: Conventional Amphotericin B or (CAB), lipid-based CAB formulations, triazoles, and echinocandins. While we compete with all of these drugs, Abelcet is predominately used in more severely ill patients.

CAB is a broad-spectrum polyene antifungal agent that is believed to act by penetrating the cell wall of a fungus, thereby killing it. CAB is particularly toxic to the kidneys, an adverse effect that often restricts the amount that can be administered to a patient. CAB is sold today as a significantly lower cost generic drug. Its usage has been declining, however, due to these toxicities.

The lipid-based formulations of CAB include Abelcet, amphotericin B liposome for injection, which is marketed by Astellas Pharma US, Inc. (Astellas) and Gilead Sciences (Gilead) in the U.S., and amphotericin B cholesteryl sulfate complex for injection, which is marketed by Three Rivers Pharmaceuticals, LLC. These formulations provide the efficacy of CAB while limiting the toxicities that are inherent in its usage. Astellas' and Gilead's amphotericin B liposome for injection has proven to be a significant competitor to Abelcet. Astellas and Gilead have reduced the price of this lipid-based product in certain geographic markets, which has increased the competitive pressure on Abelcet. In addition, in May 2005, Astellas launched a new systemic antifungal agent, micafungin sodium for injection, which is a member of the echinocandin class of antifungal agents, discussed below. To the extent we are not able to address this competitive pressure successfully or we deem it necessary to reduce the price of Abelcet in order to address this competitive threat, our market share, revenues or both could decrease, which could have a material adverse effect on our business, financial condition and results of operations.

The triazoles, which include fluconazole (marketed generically and under the brand name Diflucan<sup>®</sup> by Pfizer), itraconazole (marketed under the brand name Sporanox<sup>®</sup> by Janssen Pharmaceuticals) and voriconazole (also marketed by Pfizer under the brand name Vfend<sup>®</sup>) have the least reported incidence of side effects as compared to other classes of antifungals. Triazoles are generally thought to be limited by a narrower spectrum of activity and have issues with drug-to-drug interactions and acquired resistance. The majority of triazole units sold in the U.S. are attributed to fluconazole. Fluconazole in particular is often used in less compromised patients as prophylaxis or first-line empirical therapy. Fluconazole patients are often switched to an amphotericin B product once a clinician is convinced that a patient has a fungal infection. Voriconazole is a second-generation triazole approved in May 2002 and is available in intravenous and oral formulations. Voriconazole carries a broader spectrum of activity than first generation triazoles; however, it carries with it a narrower spectrum of activity versus CAB and the lipid amphotericin B formulations, while also retaining the same potential for drug-to-drug interactions and acquired resistance as the first generation triazoles. Voriconazole is indicated for the treatment of invasive aspergillosis, candidemia in

nonneutropenic patients, esophageal candidiasis, and scedosporium apiospermum and fusariosis in patients intolerant of, or refractory to, other therapy. Additional triazole products are in late-stage clinical development by pharmaceutical companies, including posiconazole, which was approved by the FDA in September 2006 and is marketed under the brand name Noxafil® by Schering-Plough.

The echinocandins are the newest class of products to enter the IV antifungal market. These exhibit fewer of the CAB side effects but, like the triazoles, have a more limited spectrum of activity and less clinical data supporting

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widespread use across a variety of fungal pathogens. Caspofungin (marketed under the brand name Cancidas® by Merck) was approved in the U.S. in January 2001 and was the first echinocandin to receive FDA approval. In March 2005, the FDA approved the second echinocandin, micafungin sodium for injection and in May 2005, Astellas launched this product under the brand name Mycamine® in the U.S. Caspofungin is indicated for the treatment of invasive aspergillosis in patients who are refractory to or intolerant of other therapies, esophageal candidiasis and candidemia. Micafungin is indicated for the treatment of esophageal candidiasis and prophylaxis of candida infections in patients undergoing hematopoietic stem cell transplantation. In February 2006, the FDA approved the third echinocandin, anidulafungin, (marketed under the brand name Eraxis™ by Pfizer). Anidulafungin is indicated for the treatment of esophageal candidiasis, candidemia and other candida infections.

### *Adagen*

Prior to the development of Adagen, the only treatment available to patients afflicted with adenosine deaminase or ADA-deficient SCID was a well-matched bone marrow transplant. Completing a successful transplant depends upon finding a matched donor, the probability of which is low. At present, researchers at various research centers worldwide have been treating ADA-deficient SCID patients with gene therapy, which if successfully developed, would compete with, and could eventually replace Adagen as a treatment. The theory behind gene therapy is that cultured T-lymphocytes that are genetically engineered and injected back into the patient will express the deficient adenosine deaminase enzyme permanently and at normal levels. To date, gene therapy clinical trials have been inconclusive.

### *Oncaspar*

Current standard treatment of patients with ALL includes administering L-asparaginase along with the drugs vincristine, prednisone and daunomycin. Studies have shown that long-term treatment with L-asparaginase increases the disease-free survival in high risk patients. Oncaspar, our PEG-modified L-asparaginase product, is used to treat patients with acute lymphoblastic leukemia who are hypersensitive to unmodified forms of L-asparaginase. Currently, there is one unmodified form of L-asparaginase available in the U.S. and several available in Europe. We believe that Oncaspar has an advantage over these unmodified forms of L-asparaginase of increased half life resulting in fewer injections. OPi SA (France) announced in November 2006, that the FDA granted an open IND to its product Erwinase® (Erwinia chrysanthemi L-asparaginase for injection) as a substitute for Escherichia coli-derived enzyme for the treatment of patients with ALL. Erwinia chrysanthemi-derived L-asparaginase is immunologically distinct from E. coli L-asparaginase, the active ingredient in Oncaspar. We believe it will not prove to be as effective as Oncaspar, but may have a more favorable side effect profile for patients with a hypersensitivity to Oncaspar. Erwinase® is approved in several countries outside the United States for treatment of ALL and some other hematologic malignancies.

### *DepoCyt*

DepoCyt competes against generic unmodified or Ara-C cytarabine, as well as methotrexate, another generic drug, in the treatment of lymphomatous meningitis. Both of these drugs have been used for oncology treatment for decades and DepoCyt does not have the same level of clinical experience as these drugs. Clinical trials have demonstrated, however, that DepoCyt provides certain clinical advantages versus generic cytarabine. In a randomized, multi-center trial of patients with lymphomatous meningitis, treated either with 50 mg of DepoCyt administered every 2 weeks or standard intrathecal chemotherapy administered twice a week, results showed that DepoCyt achieved a complete response rate of 41% compared with a complete response rate of 6% for unencapsulated cytarabine. In this study, complete response was prospectively defined as (i) conversion of positive to negative CSF cytology and (ii) the absence of neurologic progression. DepoCyt has also demonstrated an increase in the time to neurologic progression of 78.5 days for DepoCyt versus 42 days for unencapsulated cytarabine. There are no controlled trials, however, that demonstrate a clinical benefit resulting from this treatment, such as improvement in disease related symptoms,

increased time to disease progression, or increased survival.

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*PEG-INTRON*

PEG-INTRON, marketed by Schering-Plough, competes directly with Hoffmann-La Roche's Pegasys. Schering-Plough and Hoffman-La Roche have been the major competitors in the global alpha interferon market since the approval of their unmodified alpha interferon products, INTRON A and ROFERON-A, respectively. Due to the December 2004 launch of PEG-INTRON combination therapy in Japan, our PEG-INTRON royalties have increased over prior year levels in recent quarters. In January 2007, Hoffman-La Roche announced it received approval for its Pegasys combination therapy, Copegus (ribavirin) plus Pegasys (peginterferon alfa-2a (40KD)), by the Japanese regulatory agency. Currently in markets outside of Japan, the PEGylated interferon-based combination therapy is a highly competitive market. Further, Schering-Plough has reported that the overall hepatitis C market has been contracting. We cannot assure you that this market contraction and competitive conditions will not offset the near-term positive impact of PEG-INTRON sales in Japan, which could result in lower PEG-INTRON royalties to us. Additionally there is much research being conducted on various formulations of alpha interferon as well as many compounds being investigated for the treatment of hepatitis C. While much of this research is very early, it is possible that this research could lead to a competing product in the future.

*Macugen*

Macugen, marketed by OSI Pharmaceuticals, Inc. and Pfizer Inc., currently competes against three therapies for the treatment of neovascular (wet) age-related macular degeneration (AMD): photodynamic therapy with verteporfin, which was developed by QLT, Inc. and is marketed by Novartis AG; thermal laser treatment; and the recently approved and launched ranibizumab, marketed under the brand name Lucentis™ by Genetech. Ranibizumab, approved in June 2006, for the treatment of neovascular age-related macular degeneration, has provided significant competition to Macugen, which we expect to continue. Additional treatments for AMD are in various stages of preclinical or clinical testing. If approved, these treatments would also compete with Macugen.

**Technology**

*PEGylation*

We are aware that other companies are conducting research on chemically modified therapeutic proteins and that certain companies are modifying pharmaceutical products, including proteins, by attaching PEG.

*SCAs*

There are several technologies that compete with our SCA protein technology, including chimeric antibodies, humanized antibodies, human monoclonal antibodies, recombinant antibody Fab fragments, low molecular weight peptides and mimetics. These competing technologies can be categorized into two areas:

those modifying monoclonal antibodies to minimize immunological reaction to a foreign protein, which is the strategy employed with chimeric, humanized, and human monoclonal antibodies, and

those creating smaller portions of monoclonal antibodies, such as Fab fragments and low molecular weight peptides.

We believe that the smaller size of our SCA proteins should permit better penetration into the tumor, result in rapid clearance from the blood, and be suitable for fusion proteins, such as immunotoxins. A number of organizations have active programs in SCA proteins. We believe that our patent position on SCA proteins will likely require companies



that have not licensed our SCA protein patents to obtain licenses under our patents in order to commercialize their products. We cannot be sure, however, that other companies will not develop competing SCAs or other technologies that are not blocked by our SCA patents.

## **EMPLOYEES**

As of December 31, 2006, we employed 359 persons, including 27 persons with Ph.D. or M.D. degrees. At that date, 71 employees were engaged in research and development activities, 153 were engaged in manufacturing, 135 were engaged in sales, marketing and administration. None of our employees are covered by a collective bargaining

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agreement. All of our employees are covered by confidentiality agreements. We consider our relations with our employees to be good.

### **Item 1A. Risk Factors**

Throughout this Annual Report on Form 10-K, we have made forward-looking statements in an attempt to better enable the reader to understand our future prospects and make informed judgments. By their nature, forward-looking statements are subject to numerous factors that may influence outcomes or even prevent their eventual realization. Such factors may be external to Enzon and entirely outside our control.

We cannot guarantee that our assumptions and expectations will be correct. Failure of events to be achieved or of certain underlying assumptions to prove accurate could cause actual results to vary materially from past results and those anticipated or projected. We do not intend to update forward-looking statements.

Certain risks and uncertainties are discussed below. It is not possible to predict or identify all such factors, however. Accordingly, you should not consider this recitation to be complete.

### **Risks Related to Our Business**

If any of these risks are realized our business, prospects, financial condition, results of operations and our ability to service debt could be materially adversely affected.

#### ***We expect to incur losses over the next several years.***

As of December 31, 2006, we had an accumulated deficit of approximately \$382.6 million. In the past, we have incurred net losses. For example, during the six-month period ended December 31, 2005 and the fiscal year ended June 30, 2005, we incurred net losses of \$291.3 million and \$89.6 million, respectively. Our net loss in the six-month period ended December 31, 2005 was primarily attributable to a write-off of goodwill and a write-down of intangible assets associated with our acquisition of Abelcet in 2002. Our net loss in the fiscal year ended June 30, 2005 was primarily the result of lower sales of Abelcet and a \$78.0 million charge we incurred to increase our valuation allowance associated with our deferred tax assets based upon our assessment that it was more likely than not that we would not benefit from these assets.

Our ability to achieve long-term profitability will depend primarily on:

the success of our research and development programs;

the continued sales of our marketed products and the products on which we receive royalties; and

our and our licensees' ability to develop and obtain regulatory approvals for additional product candidates.

We expect to incur losses over the next several years, including for the year ending December 31, 2007, as we expect to make significant research and development expenditures.

***Our financial results are heavily dependent on the continued sales of our marketed products and the products on which we receive royalties; if revenues from these products fail to increase or materially decline, our results of operations, financial position and prospects will be materially harmed.***

Our results of operations are heavily dependent on the revenues we derive from the sale and marketing of PEG-INTRON marketed by Schering Plough that incorporates our PEG technology and for which we receive royalties, and our marketed products, including Oncaspar, DepoCyt, Adagen and Abelcet. In addition, we expect these products will account for a significant portion of our future revenues. As a consequence of the significant portion of our revenues derived from these products, the stagnation or decline in the sales of one or more of these products could adversely affect our operating results, financial position and prospects. Sales of these products can be affected by, among other things, competition, patient demand, and manufacturing issues.

We cannot assure you that Schering-Plough will continue to be successful in marketing PEG-INTRON. The amount and timing of resources dedicated by Schering-Plough to the marketing of PEG-INTRON is not within our control. If Schering-Plough breaches or terminates its agreement with us, the sale of PEG-INTRON could be slowed

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or blocked completely. Our revenues will be negatively affected if Schering-Plough cannot meet the marketing or manufacturing demands of the market.

***Sales of PEG-INTRON and Abelcet have been adversely affected by competitive products introduced into their respective markets and we have experienced in the past and may continue to experience in the future a decline in sales of Abelcet, which if not reversed, will adversely affect our results of operations, financial condition and prospects.***

Products that compete with both PEG-INTRON and Abelcet have been and potentially will be introduced by other drug manufacturers into their respective markets.

Hoffman-LaRoche's Pegasys, a competing PEGylated interferon-based combination therapy, has resulted in significant competitive pressure on PEG-INTRON sales in the United States and all international markets. Pegasys has taken market share away from PEG-INTRON and the overall market for PEGylated alpha-interferon for the treatment of hepatitis C has been contracting. As a result, sales of PEG-INTRON in certain markets where it competes with Pegasys and the royalties we receive on those sales have declined. We cannot assure you that Pegasys will not continue to gain market share at the expense of PEG-INTRON which could result in lower PEG-INTRON sales and lower royalties to us. Hoffmann-LaRoche reported that they expect approval in Japan for Pegasys combination therapy. The launch in Japan of Pegasys is expected to have a negative impact on PEG-INTRON's Japanese market share and sales.

Similarly, the continued sale of newer products from Merck, Pfizer, Schering-Plough and Astellas Pharma in the antifungal market (where Abelcet competes) has negatively impacted Abelcet sales as clinicians utilize these other therapeutic agents. Pfizer and Schering-Plough have each recently obtained approval for an additional new product in the antifungal market that is expected to further increase competition. In addition, Astellas Pharma and Gilead Sciences, Inc. are currently marketing AmBisome, and Three Rivers Pharmaceuticals, Inc. is marketing Amphotec, each of which is a lipid-based version of amphotericin B, for the treatment of fungal infections. AmBisome and Amphotec each compete with Abelcet which has resulted in greater competitive pressure on Abelcet sales. During calendar year 2006, we continued to experience increasing pricing pressure with respect to Abelcet. In particular, Astellas Pharma and Gilead Sciences, Inc., have aggressively lowered the price of their product in certain regions and for certain customers in the United States. This has resulted in the shrinkage or loss of certain of our customer accounts. While we are developing and implementing strategies to address the competitive threats facing Abelcet, we cannot assure you that we will be able to increase sales of Abelcet or prevent further decreases in Abelcet sales. If we are not successful in addressing the competitive threats, it could adversely affect our operating results, financial condition and prospects.

***Significant indebtedness may adversely affect our cash flow and our ability to repay or repurchase our 2013 convertible notes and 2008 convertible notes.***

As of December 31, 2006, we had \$397.6 million of outstanding indebtedness, primarily related to our outstanding 2013 convertible notes and 2008 convertible notes. Our significant debt level could have important negative consequences, including:

increasing our vulnerability to general adverse economic and industry conditions;

limiting our ability to obtain additional financing;

requiring the dedication of a substantial portion of our expected cash flow from operations to service our indebtedness, thereby reducing the amount of our expected cash flow available for other purposes, including

capital expenditures;

limiting our flexibility in planning for, or reacting to, changes in our business and the industry in which we compete;

placing us at a possible competitive disadvantage relative to less leveraged competitors and competitors that have better access to capital resources; and

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making it difficult or impossible for us to pay the principal amount of the notes at maturity, the interest on or the repurchase price of the notes upon a fundamental change, thereby causing an event of default under the indenture.

In addition, the notes are our obligation exclusively. We may have difficulty paying what we owe under the notes if we or our subsidiaries incur additional indebtedness or other liabilities.

***We depend on our collaborative partners; if we lose our collaborative partners or they do not apply adequate resources to our collaborations, our product development and financial performance may suffer.***

We rely and will depend heavily in the future on collaborations with partners, primarily pharmaceutical and biotechnology companies, for one or more of the research, development, manufacturing, marketing and other commercialization activities relating to most of our product candidates. If we lose our collaborative partners, or if they do not apply adequate resources to our collaborations, our product development and financial performance may suffer.

The amount and timing of resources dedicated by our collaborators to their collaborations with us is not within our control. If any collaborator breaches or terminates its agreements with us, or fails to conduct its collaborative activities in a timely manner, the commercialization of our product candidates could be slowed or blocked completely. We cannot assure you that our collaborative partners will not change their strategic focus or pursue alternative technologies or develop alternative products as a means for developing treatments for the diseases targeted by these collaborative programs. Our collaborators could develop competing products.

We cannot assure you that our collaborations will be successful. Disputes may arise between us and our collaborators as to a variety of matters, including financing obligations under our agreements and ownership of intellectual property rights. These disputes may be both expensive and time-consuming and may result in delays in the development and commercialization of products. If any of the product candidates that we are commercializing with collaborators are delayed or stopped from coming to market or we experience increased costs as a result of our relationship with our collaborators, our financial performance could be adversely affected.

***We will need to obtain additional financing to meet our future capital needs and our failure to do so could materially and adversely affect our business, financial condition and operations.***

Our current development projects and marketing initiatives require substantial capital. We believe that our current cash, cash equivalents and investments and our anticipated cash flow from operations will be adequate to satisfy our capital needs for the near future, but we will likely need to increase our cash flow from operations or obtain financing to meet our future capital needs, which we expect will be substantial. We will require substantial additional funds to conduct research activities, preclinical studies, clinical trials and other activities relating to the successful commercialization of potential products. In addition, we may seek to acquire additional products, technologies and companies, which could require substantial capital. The competitive pressures impacting PEG-INTRON and Abelcet may cause our cash flow from operations to decrease rather than increase in the future and we cannot be sure that additional funds from other sources will be available on commercially reasonable terms, if at all. If adequate funds are unavailable from operations or additional sources of financing, we may have to delay, reduce the scope of or eliminate one or more of our research or development programs or one or more of our potential acquisitions of technologies or companies, which could materially and adversely affect our business, financial condition and operations.

As of December 31, 2006, we had \$122.6 million of our 2008 4.5% convertible subordinated notes outstanding. The notes will mature on July 1, 2008 unless earlier converted, redeemed at our option, or redeemed at the option of the noteholder upon a default by us or fundamental change, each as described in the indenture for the notes. We will be

required to repay the notes at maturity unless we can refinance the debt. Noteholders are very unlikely to convert their notes into common stock before the maturity date. We expect that we will need to refinance or obtain new financing to pay at least a portion of the principal amount of these notes. We currently are considering financing alternatives; however, we cannot be certain that any of such financing alternatives will be consummated on commercially reasonable terms, or at all.

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We may seek to raise any necessary additional funds through equity or debt financings, collaborative arrangements with corporate partners or other sources which may be dilutive to existing stockholders. We cannot assure you that we will be able to obtain additional funds on commercially reasonable terms, if at all.

***We purchase some of the compounds utilized in our products from a single source or a limited group of suppliers, and the partial or complete loss of one of these suppliers could cause production delays and a substantial loss of revenues.***

We purchase the unmodified compounds and bulk PEGs utilized in our approved products and products under development from outside suppliers. In some cases, we have a limited number of suppliers. Moreover, in some cases, we have no supply agreement. Specifically, our ability to obtain compounds for our respective products may be limited by the following factors.

*Oncaspar.* We have supply agreements with Ovation Pharmaceuticals, Inc. and Kyowa Hakko to produce the unmodified forms of L-asparaginase, the active ingredient used in the production of Oncaspar. Our agreement with Ovation Pharmaceuticals, Inc. provides for Ovation to supply L-asparaginase to us through 2009. We have committed to effectuate a technology transfer of the cell line and manufacturing of the L-asparaginase to our own supplier by December 31, 2009, and then supply L-asparaginase back to Ovation during the years 2010-2012. It is possible that we will not be able to successfully complete the technology transfer by the deadline or at all due to technological, manufacturing, regulatory or other issues. If we are unable to effectuate the technology transfer by the deadline, we may not be able to manufacture or sell Oncaspar, which would result in a substantial loss of revenues. Also, if we are unable to supply L-asparaginase back to Ovation during the years 2010-2012, we could be required to pay damages to Ovation in connection with a breach of our obligation to supply them.

*Adagen.* We purchase the unmodified adenosine deaminase enzyme used in the manufacturing of Adagen from Roche Diagnostics. Roche Diagnostics, which is based in Germany, and is the only FDA-approved supplier of the adenosine deaminase enzyme, or ADA, used in Adagen. During 2002 we obtained FDA approval of the use of the ADA enzyme obtained from bovine intestines from cattle of New Zealand origin. New Zealand currently certifies that its cattle are bovine spongiform encephalopathy (BSE or mad cow disease) free. Beginning in September 2002, the U.S. Department of Agriculture (USDA) required all animal-sourced materials shipped to the United States from any European country to contain a veterinary certificate that the product is BSE free, regardless of the country of origin. Our ADA supply agreement with Roche Diagnostics terminated in 2004 although we are still receiving our supply of ADA from them. We are currently seeking to develop a recombinant ADA as an alternative to the naturally-derived bovine product. This is a difficult and expensive undertaking as to which success cannot be assured. Roche Diagnostics continues to supply us with our requirements of ADA and indicated when they terminated the supply agreement that they will continue to do so for a reasonable period of time as we work to develop another source of ADA. We may have little or no notice if Roche Diagnostics decides to stop supplying us with ADA. If we are unable to secure an alternative source of ADA before Roche Diagnostics discontinues supplying the material to us, we will likely experience inventory shortages and potentially a period of product unavailability or a long-term inability to produce Adagen. If this occurs, it will have a measurable (and potentially material) negative impact on our business and results of operations and it could potentially result in significant reputational harm and regulatory difficulties.

*Abelcet.* We have two suppliers that produce the amphotericin B used in the manufacture of Abelcet, Bristol-Myers Squibb (BMS) and Alpharma A.p.S. Our supply agreement with BMS terminated on March 1, 2006, and we do not have a supply agreement with Alpharma. We are currently still receiving supply of amphotericin B from BMS, and Alpharma may provide an alternate source in the future, although there can be no assurance they will provide us with amphotericin B. Additionally, we are seeking to qualify at least one additional source of supply. The termination of our supply agreement by BMS may give rise to future increased costs for the acquisition of amphotericin B, as well as



increased capital expenditures related to readying a new supplier's facilities for cGMP, and obtaining production and regulatory approval of Abelcet incorporating the alternative amphotericin B. Although there can be no assurance as to the timing of these increased costs and additional capital expenditures, we anticipate that these may be incurred beginning in calendar year 2007.

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If we experience a delay in obtaining or are unable to obtain any compound for any of the products discussed above on reasonable terms, or at all, it could have a material adverse effect on our business, financial condition and results of operations. No assurance can be given that in any case alternative suppliers with appropriate regulatory authorizations could be readily identified if necessary. If we experience delays in obtaining or are unable to obtain any such compounds on reasonable terms, it could have a material adverse effect on our business, financial condition and results of operations.

If we are required to obtain an alternate source for an unmodified compound utilized in a product, the FDA and relevant foreign regulatory agencies will likely require that we perform additional testing to demonstrate that the alternate material is biologically and chemically equivalent to the unmodified compound previously used in our clinical trials. This testing could delay or stop development of a product, limit commercial sales of an approved product and cause us to incur significant additional expenses. If we are unable to demonstrate that the alternate material is chemically and biologically equivalent to the previously used unmodified compound, we will likely be required to repeat some or all of the preclinical and clinical trials conducted for the compound. The marketing of an FDA approved drug could be disrupted while such tests are conducted. Even if the alternate material is shown to be chemically and biologically equivalent to the previously used compound, the FDA or relevant foreign regulatory agency may require that we conduct additional clinical trials with the alternate material.

***There is a high risk that early-stage research and development might not generate successful product candidates.***

At the present time the vast majority of our research and development operations are focused on the early stages of product research and development, and we are first commencing clinical trials on our product development candidates. The research and development of pharmaceutical products is subject to high risk of failure. Most product development candidates fail to reach the market. Our success depends on the identification of new drugs or modified forms of existing drugs that we can successfully develop and commercialize. We do not expect any of the drugs resulting from our current research and development efforts to be commercially available for several years, if at all. In order to fill our pipeline of product candidates under development, we may attempt to acquire rights to products under development by other companies. The competition for the acquisition of rights to products that are viewed as viable candidates for successful development and commercialization is intense, and we will be competing for such opportunities with many companies with resources that are substantially greater than ours. In addition, our potential products are subject to risks of failure inherent in the development of new pharmaceutical products. These risks include, but are not limited to, risks that the drug might prove ineffective or may cause harmful side-effects during pre-clinical testing or clinical trials, may fail to receive necessary regulatory approvals, cannot be manufactured on a commercial scale basis and therefore may not be economical to produce, may fail to achieve market acceptance or that we may be precluded from commercialization by proprietary rights of third parties.

***Our product candidates must undergo extensive clinical testing, the results of which are uncertain and could substantially delay or prevent us from obtaining regulatory approval.***

Before we can obtain regulatory approval for a product candidate, we must undertake extensive clinical testing in humans to demonstrate safety and efficacy to the satisfaction of the FDA. Clinical trials of new product candidates sufficient to obtain regulatory marketing approval are expensive and take years to complete, and the outcome of these trials is uncertain. Clinical development of any product candidate that we determine to take into clinical trials may be delayed or prevented at any time for some or all of the following reasons:

negative or ambiguous results regarding the efficacy of the product candidate;

undesirable side effects that delay or extend the trials or make the product candidate not medically or commercially viable;

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

regulatory delays or other regulatory actions, including changes in regulatory requirements;

difficulties in obtaining sufficient quantities of the product candidate manufactured under current good manufacturing practices;

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delays, suspension or termination of the trials imposed by us, an independent institutional review board for a clinical trial site, or clinical holds placed upon the trials by the FDA; and

we may have inadequate financial resources to fund these trials.

Also, our development programs in the early clinical or preclinical phases. Our future success depends, in part, on our ability to select successful product candidates, complete preclinical development of these product candidates and advance them to clinical trials. Our preclinical programs may not lead to clinical programs if we fail to identify promising product candidates or our product candidates fail to be safe and effective in preclinical tests. 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 larger patient populations, as evaluated in Phase III clinical trials.

From time to time, we may establish and announce certain development goals for our product candidates and programs; however, given the complex nature of the drug discovery and development process, it is difficult to predict accurately if and when we will achieve these goals. If we are unsuccessful in advancing our preclinical programs into clinical testing or in obtaining regulatory approval, our long-term business prospects will be harmed.

We rely and will continue to rely on clinical investigators, academic institutions, third-party contract research organizations and consultants to perform some or all of the functions associated with preclinical testing or clinical trials. While we rely heavily on these parties for successful execution of our clinical trials, we do not control many aspects of their activities. The failure of any of these parties to perform in an acceptable and timely manner, including in accordance with any applicable regulatory requirements, such as good clinical and laboratory practices, or preclinical testing or clinical trial protocols, could cause a delay or otherwise adversely affect our preclinical testing or clinical trials and ultimately the timely advancement of our development programs. We also depend upon third party manufacturers to qualify for FDA approval and to comply with good manufacturing practices required by regulators. The failure of our manufacturers and suppliers to comply with current good manufacturing practices may result in the delay or termination of clinical studies.

A delay in or termination of any of our clinical development programs could have an adverse effect on our business.

***We depend on patents and proprietary rights, which may offer only limited protection against potential infringement and the development by our competitors of competitive products. The U.S. and foreign patents upon which our original PEG technology was based have expired.***

The pharmaceutical industry places considerable importance on obtaining patent and trade secret protection for new technologies, products and processes. Our success depends, in part, on our ability to develop and maintain a strong patent position for our products and technologies both in the United States and in other countries. We have an extensive portfolio of issued U.S. patents and filed applications many of which have foreign counterparts. These patents, if extensions are not granted, are expected to expire beginning in 2007 through 2023. Under our license agreements, we have access to large portions of Micromet AG's patent estate as well as a small number of individually licensed patents. Of the patents owned or exclusively licensed by us, 7 relate to PEG-INTRON, 17 relate to Abelcet and 3 relate to DepoCyt. Although we believe that our patents provide certain protection from competition for Abelcet and DepoCyt, we cannot assure you that such patents will be of substantial protection or commercial benefit to us, will afford us adequate protection from competing products, or will not be challenged or declared invalid. In addition, we cannot assure you that additional U.S. patents or foreign patent equivalents will be issued to us. The scope of patent claims for biotechnological inventions is uncertain and our patents and patent applications are subject to this uncertainty.

In September 2006, we gave notice to Nektar of our intention not to renew the provisions of our agreement with Nektar that gives Nektar the right to sub-license a portion of our PEG technology and patents to third parties. This right terminated as of January 2007 and will not affect any existing sub-licenses granted by Nektar.

We may become aware that certain organizations are engaging in activities that infringe certain of our PEG and single-chain antibody, or SCA, technology patents. We cannot assure you that we will be able to enforce our patent and other rights against such organizations.

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We expect that there will continue to be significant litigation in the biotechnology and pharmaceutical industries regarding patents and other proprietary rights. We have in the past been involved in patent litigation and we may likely become involved in additional patent litigation in the future. We may incur substantial costs in asserting any patent rights and in defending suits against us related to intellectual property rights. Such disputes could substantially delay or prevent our product development or commercialization activities and could have a material adverse effect on our business, financial condition and results of operations.

The U.S and corresponding foreign patents upon which our original PEG technology was based and containing broad claims covering the attachment of PEG to polypeptides in 1996. Without that patent protection, other parties are permitted to make, use or sell products covered by the claims of those patents, subject to other patents, including those which we hold. We have obtained numerous patents with claims covering improved methods of attaching or linking PEG to therapeutic compounds. We cannot assure you that any of these patents will enable us to prevent competition or that competitors will not develop alternative methods of attaching PEG to compounds potentially resulting in competitive products outside the protection that may be afforded by our patents. We are aware that others have also filed patent applications and have been granted patents in the United States and other countries with respect to the application of PEG to proteins and other compounds.

***We or our suppliers could experience delays or difficulties in manufacturing, including problems complying with the FDA's regulations for manufacturing our products. These problems could materially harm our business.***

Manufacturers of drugs must comply with current cGMP regulations, which include quality control and quality assurance requirements as well as the corresponding maintenance of records and documentation. Manufacturing facilities are subject to ongoing periodic inspection by the FDA and corresponding state agencies, including unannounced inspections of our commercial manufacturing facilities. We or our present or future suppliers may be unable to comply with the applicable cGMP regulations and other FDA regulatory requirements.

Adagen and Oncaspar, which we manufacture, use our earlier PEG technology which tends to be less stable than the PEG technology used in PEG-INTRON and our products under development. Due, in part, to the drawbacks in the earlier technologies we have had and may continue to have manufacturing problems with these products.

We continue to face manufacturing and stability issues with Oncaspar. To date, we have been unable to identify the cause of these issues. If we continue to have these issues with Oncaspar, we may have a disruption in our ability to manufacture Oncaspar. Manufacturing and stability problems have required us to implement voluntary recalls or market withdrawals for certain batches of Oncaspar periodically since 2002 and as recently as the fourth quarter of 2006. Mandatory recalls can also take place if regulators or courts require them, even if we believe our products are safe and effective. Recalls result in lost sales of the recalled products themselves and can result in further lost sales while replacement products are manufactured or due to customer dissatisfaction. We cannot assure you that future product recalls or market withdrawals will not materially adversely affect our business, our financial conditions, results of operations or our reputation and relationships with our customers. Disruption in supply or manufacturing difficulties relating to Oncaspar could cause a disruption in our ability to market and sell Oncaspar and result in a substantial loss of revenues.

The FDA and the MHRA, the British equivalent of the FDA, have conducted periodic inspections of our manufacturing facilities related to Abelcet, Oncaspar and Adagen. Following certain of these inspections, the FDA has issued Form 483 reports citing deviations from cGMP, the most recent of which were issued in January 2006 for our New Jersey facility and August 2005 for our Indianapolis facility. We have responded to such reports with corrective action plans.

We are aware that the FDA has conducted inspections of certain of the manufacturing facilities of Schering-Plough, who manufactures PEG-INTRON, and Merck, who manufactures the L-asparaginase that we receive from Ovation Pharmaceuticals for use in the production of Oncaspar, and those inspections have resulted in the issuance of Forms 483 citing deviations from cGMP.

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If we or our partners face additional manufacturing problems in the future or if we or our licensees are unable to satisfactorily resolve current or future manufacturing problems, the FDA could require us or our licensees to discontinue the distribution of our products or to delay continuation of clinical trials.

***We depend on key personnel and may not be able to retain these employees or recruit additional qualified personnel, which would harm our business.***

Because of the specialized scientific nature of our business, we are highly dependent upon qualified scientific, technical and managerial personnel, including our Chief Executive Officer. There is intense competition for qualified personnel in the pharmaceutical field. Therefore, we may not be able to attract and retain the qualified personnel necessary for the development of our business. Although we have employment agreements with our Chief Executive Officer, Chief Financial Officer and Chief Scientific Officer, our ability to continue to retain such officers, as well as other senior executives or key managers is not assured. The loss of the services of one or a combination of our senior executives, particularly our Chief Executive Officer, Chief Financial Officer and Chief Scientific Officer, as well as the failure to recruit additional key scientific, technical and managerial personnel in a timely manner, would have an adverse effect on our business.

## **Risks Related to Our Industry**

***We face rapid technological change and intense competition, which could harm our business and results of operations.***

The biopharmaceutical industry is characterized by rapid technological change. Our future success will depend on our ability to maintain a competitive position with respect to technological advances. Rapid technological development by others may result in our products and technologies becoming obsolete.

We face intense competition from established biotechnology and pharmaceutical companies, as well as academic and research institutions that are pursuing competing technologies and products. We know that competitors are developing or manufacturing various products that are used for the prevention, diagnosis or treatment of diseases that we have targeted for product development. For example, PEG-INTRON faces increased competition from Hoffman LaRoche's Pegasys, Abelcet faces increased competition from Astellas Pharma and Gilead Pharmaceuticals' AmBisome and Three Rivers Pharmaceuticals' Amphotec. DepoCyt competes with the generic drugs, cytarabine and methotrexate, and Oncaspar competes with ELSPAR® (asparaginase). Other existing and future products, therapies and technological approaches will compete directly with our products. Current and prospective competing products may provide greater therapeutic benefits for a specific problem or may offer comparable performance at a lower cost. In addition, any product candidate that we develop and that obtains regulatory approval must then compete for market acceptance and market share.

Many of our competitors have substantially greater research and development capabilities and experience and greater manufacturing, marketing and financial resources than we do. Accordingly, our competitors may develop technologies and products that are superior to those we or our collaborators are developing and render our technologies and products or those of our collaborators obsolete and noncompetitive. In addition, many of our competitors have much more experience than we do in preclinical testing and human clinical trials of new drugs, as well as in obtaining FDA and other regulatory approval. If we cannot compete effectively, our business and financial performance would suffer.

***We and our licensees are subject to extensive regulation. Compliance with these regulations can be costly, time consuming and subject us to unanticipated delays in developing our products. The regulatory approval process is highly uncertain and we may not successfully secure approval for new products.***



The marketing of pharmaceutical products in the United States and abroad is subject to stringent governmental regulation. The sale of any new products for use in humans in the United States will require the prior approval of the FDA. Similar approvals by comparable agencies are required in most foreign countries. The FDA has established mandatory procedures and safety standards that apply to the clinical testing and marketing of pharmaceutical products. Obtaining FDA approval for a new therapeutic product may take several years and involve substantial

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expenditures. We cannot assure you that we or our licensees will be able to obtain or maintain FDA or other relevant marketing approval for any of our products.

In addition, any approved products are subject to continuing regulation. If we or our licensees fail to comply with applicable requirements, it could result in penalties, fines, recalls or other injunctive or oversight remedies.

If we or our licensees fail to obtain or maintain requisite governmental approvals or fail to obtain or maintain approvals of the scope requested, it will delay or preclude us or our licensees or marketing partners from marketing our products. It could also limit the commercial use of our products. Any such failure or limitation may have a material adverse effect on our business, financial condition and results of operations.

In some cases, FDA approval may be provisional. For example, our product DepoCyt was approved under the Accelerated Approval regulations of Subpart H of the Food, Drug and Cosmetic Act. These regulations are intended to make promising products for life-threatening diseases available to the market on the basis of preliminary evidence prior to formal demonstration of patient benefit. Approvals granted under Subpart H are provisional and require a written commitment to complete post-approval clinical studies that formally demonstrate patient benefit. Our licensor, SkyePharma, is responsible for conducting the required study. If the FDA determines that such post-approval clinical study fails to demonstrate patient benefit, the registration for DepoCyt may be subject to withdrawal.

***Even if we obtain regulatory approval for our products, they may not be accepted in the marketplace.***

The commercial success of our products will depend upon their acceptance by the medical community and third-party payors as clinically useful, cost-effective and safe. Even if our products obtain regulatory approval, we cannot assure you that they will achieve market acceptance of any kind. The degree of market acceptance will depend on many factors, including:

the receipt, timing and scope of regulatory approvals,

the timing of market entry in comparison with potentially competitive products,

the availability of third-party reimbursement, and

the establishment and demonstration in the medical community of the clinical safety, efficacy and cost-effectiveness of drug candidates, as well as their advantages over existing technologies and therapeutics.

If any of our products do not achieve market acceptance, we will likely lose our entire investment in that product, giving rise to a material adverse effect on our business, financial condition and results of operations.

***Our operations are subject to extensive environmental laws and regulations.***

Our operations are subject to federal, state and local environmental laws and regulations concerning, among other things, the generation, handling, storage, transportation, treatment and disposal of hazardous, toxic and radioactive substances and the discharge of pollutants into the air and water. Environmental permits and controls are required for some of our operations and these permits are subject to modification, renewal and revocation by the issuing authorities. We believe that our facilities are in substantial compliance with our permits and environmental laws and regulations and do not believe that future compliance with current environmental law will have a material adverse effect on our business, financial condition or results of operations. If, however, we were to become liable for an accident, or if we were to suffer an extended facility shutdown as a result of such contamination, we could incur significant costs, damages and penalties that could harm our business.

*We may be subject to a variety of types of product liability or other claims based on allegations that the use of our products has resulted in adverse effects, whether by participants in our clinical trials or by patients using our products, and there is no assurance that our insurance will cover all product liability or other claims.*

Although we maintain product liability insurance for claims arising from the use of our products in clinical trials prior to FDA approval and for claims arising from the use of our products after FDA approval at levels that we

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believe are appropriate, we cannot assure you that we will be able to maintain our existing insurance coverage or obtain additional coverage on commercially reasonable terms for the use of our other products in the future. Also, our insurance coverage and our resources may not be sufficient to satisfy any liability resulting from product liability claims, and a product liability claim may have a material adverse effect on our business, financial condition or results of operations.

***Because of the uncertainty of pharmaceutical pricing, reimbursement and healthcare reform measures, we may be unable to sell our products profitably in the United States.***

The availability of reimbursement by governmental and other third-party payors affects the market for any pharmaceutical product. In recent years, there have been numerous proposals to change the healthcare system in the United States and further proposals are likely. Some of these proposals have included measures that would limit or eliminate payments for medical procedures and treatments or subject the pricing of pharmaceuticals to government control. In addition, government and private third-party payors are increasingly attempting to contain healthcare costs by limiting both the coverage and the level of reimbursement of drug products. For example, under the Medicare Prescription Drug Improvement and Modernization Act of 2003 (the Act), Medicare benefits are provided primarily through private entities that attempt to negotiate price concessions from pharmaceutical manufacturers. This may increase pressure to lower prescription drug prices. The Act also includes other cost containment measures for Medicare in the event Medicare cost increases exceed a certain level, which measures may impose limitations on prescription drug prices. These changes in Medicare reimbursement could have a negative impact on our revenues derived from sales of our products. Moreover, significant uncertainty exists as to the reimbursement status of newly-approved healthcare products.

Our ability to commercialize our products will depend, in part, on the extent to which reimbursement for the cost of the products and related treatments will be available from third-party payors. If we or any of our collaborators succeed in bringing one or more products to market, we cannot assure you that third-party payors will establish and maintain price levels sufficient for realization of an appropriate return on our investment in product development. In addition, lifetime limits on benefits included in most private health plans may force patients to self-pay for treatment. For example, patients who receive Adagen are expected to require injections for their entire lives. The cost of this treatment may exceed certain plan limits and cause patients to self-fund further treatment. Furthermore, inadequate third-party coverage may lead to reduced market acceptance of our products. Significant changes in the healthcare system in the United States or elsewhere could have a material adverse effect on our business and financial performance.

***The law or FDA policy could change and expose us to competition from generic or follow-on versions of our products, which could adversely impact our business.***

Under current U.S. law and FDA policy, generic versions of conventional chemical drug compounds, sometimes referred to as small molecule compounds, may be approved through an abbreviated approval process. There is no abbreviated approval process under current law for biological products approved under the Public Health Service Act through a Biologic License Application, such as monoclonal antibodies, cytokines, growth factors, enzymes, interferons and certain other proteins. However, various proposals have been made to establish an abbreviated approval process to permit approval of generic or follow-on versions of these types of biological products under U.S. law, and the FDA's counterpart in the European Union has recently approved a number of follow-on biologics. It is not clear whether the FDA will adopt any proposals on generic or follow-on biologics. However, if the law is changed or if the FDA somehow extends its existing authority in new ways, and third parties are permitted to obtain approvals of versions of our biological products through an abbreviated approval mechanism, and without conducting full clinical studies of their own, it could adversely affect our business.



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**Risks Related to Our Common Stock and our Convertible Notes**

*The price of our common stock has been, and may continue to be, volatile, which may significantly affect the trading price of our notes.*

Historically, the market price of our common stock has fluctuated over a wide range, and it is likely that the price of our common stock will fluctuate in the future. The market price of our common stock could be impacted due to a variety of factors, including, in addition to global and industry-wide events:

- the level of revenues we generate from our sale of products and royalties we receive;
- the losses we incur or the profits we generate;
- the results of preclinical testing and clinical trials by us, our collaborative partners or our competitors;
- announcements of technical innovations or new products by us, our collaborative partners or our competitors;
- the status of corporate collaborations and supply arrangements;
- regulatory approvals;
- developments in patent or other proprietary rights;
- public concern as to the safety and efficacy of products developed by us or others; and
- litigation.

In addition, due to one or more of the foregoing factors in one or more future quarters, our results of operations may fall below the expectations of securities analysts and investors. In that event, the market price of our common stock could be materially and adversely affected. Volatility in the price of our common stock may significantly affect the trading price of our convertible notes.

*Events with respect to our share capital could cause the shares of our common stock outstanding to increase.*

Sales of substantial amounts of our common stock in the open market, or the availability of such shares for sale, could adversely affect the price of our common stock. We had approximately 44.0 million shares of common stock outstanding as of December 31, 2006. As of that date, the following securities that may be exercised for, or are convertible into, shares of our common stock were outstanding:

*Options.* Stock options to purchase 6.7 million shares of our common stock at a weighted average exercise price of approximately \$12.36 per share;

4.5% convertible subordinated notes due 2008 (the 2008 convertible notes ). Our 2008 convertible notes that may be converted into 1.7 million shares of our common stock at a conversion price of \$70.98 per share.

4% convertible senior notes due 2013 (the 2013 convertible notes ). Our 2013 convertible notes that may be converted into 28.8 million shares of our common stock at a conversion price of \$9.55 per share.

*Restricted stock units.* 1.5 million shares of our common stock issuable in respect of outstanding restricted stock units held by officers, employees and directors.

The shares of our common stock that may be issued under the options, restricted stock, the 2008 convertible notes and the 2013 convertible notes are currently registered with the Securities and Exchange Commission, and, therefore, those shares of common stock that may be issued will be eligible for public resale.

The conversion of some or all of the notes will dilute the ownership interests of existing stockholders. Any sales in the public market of the common stock issuable upon such conversion could adversely affect prevailing market prices of our common stock. In addition, the existence of the notes may encourage short selling by market participants because the conversion of the notes could depress the price of our common stock.

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***The issuance of preferred stock may adversely affect rights of common stockholders or discourage a takeover.***

Under our certificate of incorporation, our board of directors has the authority to issue up to three million shares of preferred stock and to determine the price, rights, preferences and privileges of those shares without any further vote or action by our stockholders. The rights of the holders of common stock will be subject to, and may be adversely affected by, the rights of the holders of any shares of preferred stock that may be issued in the future.

In May 2002, our board of directors authorized shares of Series B preferred stock in connection with its adoption of a stockholder rights plan, under which we issued rights to purchase Series B preferred stock to holders of the common stock. Upon certain triggering events, such rights become exercisable to purchase common stock (or, at the discretion of our board of directors, Series B preferred stock) at a price substantially discounted from the then current market price of the common stock. Our stockholder rights plan could generally discourage a merger or tender offer involving our securities that is not approved by our board of directors by increasing the cost of effecting any such transaction and, accordingly, could have an adverse impact on stockholders who might want to vote in favor of such merger or participate in such tender offer.

While we have no present intention to authorize any additional series of preferred stock, such issuance, while providing desirable flexibility in connection with possible acquisitions and other corporate purposes, could also have the effect of making it more difficult for a third party to acquire a majority of our outstanding voting stock. The preferred stock may have other rights, including economic rights senior to the common stock, and, as a result, the issuance thereof could have a material adverse effect on the market value of the common stock.

***Our 2008 notes are subordinated to all existing and future indebtedness.***

Our 2008 convertible subordinated notes are unsecured and subordinated in right of payment to all of our existing and future senior indebtedness, including our 2013 convertible notes. In the event of our bankruptcy, liquidation or reorganization, or upon acceleration of the notes due to an event of default under the indenture and in certain other events, our assets will be available to pay obligations on the notes only after all senior indebtedness has been paid. As a result, there may not be sufficient assets remaining to pay amounts due on any or all of the outstanding notes. We are not prohibited from incurring debt, including senior indebtedness, under the indenture. If we were to incur additional debt or liabilities, our ability to pay our obligations on the notes could be adversely affected.

***We may be unable to redeem our 2013 convertible notes or 2008 convertible notes upon a fundamental change.***

We may be unable to redeem the 2013 convertible notes or the 2008 convertible notes in the event of a fundamental change, as defined in the respective indentures. Upon a fundamental change, holders of the 2013 convertible notes and 2008 convertible notes may require us to redeem all or a portion of the 2013 convertible notes and the 2008 convertible notes. If a fundamental change were to occur, we may not have enough funds to pay the redemption price for all tendered 2013 convertible notes and 2008 convertible notes. Any future credit agreements or other agreements relating to our indebtedness may contain similar provisions, or expressly prohibit the repurchase of the 2013 convertible notes or 2008 convertible notes upon a fundamental change or may provide that a fundamental change constitutes an event of default under that agreement. If a fundamental change occurs at a time when we are prohibited from purchasing or redeeming 2013 convertible notes or 2008 convertible notes, we could seek the consent of our lenders to redeem the 2013 convertible notes or 2008 convertible notes or could attempt to refinance this debt. If we do not obtain a consent, we could not purchase or redeem the 2013 convertible notes or 2008 convertible notes. Our failure to redeem tendered 2013 convertible notes or 2008 convertible notes would constitute an event of default under the respective indenture. In such circumstances, or if a fundamental change would constitute an event of default under our senior indebtedness, the subordination provision of the indenture governing the 2008 convertible notes would



restrict payments to the holders of the 2008 convertible notes.

The term fundamental change is limited to certain specified transactions as defined in the respective indentures and may not include other events that might adversely affect our financial condition or the market value of the 2013 convertible notes or the 2008 convertible notes or our common stock. Our obligation to offer to redeem the 2013

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convertible notes or the 2008 convertible notes upon a fundamental change would not necessarily afford holders of the 2013 convertible notes or the 2008 convertible notes protection in the event of a highly leveraged transaction, reorganization, merger or similar transaction involving us.

***The market for unrated debt is subject to disruptions that could have an adverse effect on the market price of the 2013 convertible notes or the 2008 convertible notes, or a market for our notes may fail to develop or be sustained.***

The 2013 convertible notes and the 2008 convertible notes are not rated. As a result, holders of the notes have the risks associated with an investment in unrated debt. Historically, the market for unrated debt has been subject to disruptions that have caused substantial volatility in the prices of such securities and greatly reduced liquidity for the holders of such securities. If the notes are traded, they may trade at a discount from their initial offering price, depending on, among other things, prevailing interest rates, the markets for similar securities, general economic conditions and our financial condition, results of operations and prospects. The liquidity of, and trading markets for, the notes also may be adversely affected by general declines in the market for unrated debt. Such declines may adversely affect the liquidity of, and trading markets for, the notes, independent of our financial performance or prospects. In addition, certain regulatory restrictions prohibit certain types of financial institutions from investing in unrated debt, which may further suppress demand for such securities. We cannot assure you that the market for the notes will not be subject to similar disruptions or that any market for our notes will develop or be sustained. Any such disruptions may have an adverse effect on the holders of the notes.

***We may not have sufficient funds available to pay amounts due under our 2013 convertible notes or 2008 convertible notes.***

We may not have sufficient funds available or may be unable to arrange for additional financing to satisfy our obligations under the notes. Our ability to pay cash to holders of the notes or meet our payment and other debt obligations depends on our ability to generate significant cash flow in the future. This, to some extent, is subject to general economic, financial, competitive, legislative and regulatory factors, as well as other factors that are beyond our control. Also, the indentures governing our 2013 convertible notes and 2008 convertible notes do not contain any financial or operating covenants or restrictions on the payments of dividends, the incurrence of indebtedness or the issuance or repurchase of securities by us or any of our subsidiaries. We cannot assure you that our business will generate cash flow from operations, or that future borrowings will be available to us in an amount sufficient to enable us to meet our payment obligations under the notes and our other obligations and to fund other liquidity needs.

**Item 1B. *Unresolved Staff Comments.***

None.

**Item 2. *Properties***

We have a 56,000 square foot manufacturing facility in Indianapolis, Indiana, at which we produce Abelcet for the Products segment and products we manufacture for others on a contract basis (Contract Manufacturing segment). Our Indianapolis facility is not subject to any mortgage.

The following are all of the facilities that we currently lease:

<b>Location</b>	<b>Principal Operations</b>	<b>Approx Square Footage</b>	<b>Approx. Annual Rent</b>	<b>Lease Expiration</b>
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20 Kingsbridge Road Piscataway, NJ	Research & Development	56,000	\$ 613,000(1)	July 31, 2021
300 Corporate Ct. S. Plainfield, NJ	Manufacturing	24,000	\$ 217,000(2)	October 31, 2012
685 Route 202/206 Bridgewater, NJ	Administrative	51,000	\$ 1.2 million(3)	January 31, 2018

(1) Under the terms of the lease, annual rent increases over the remaining term of the lease from \$613,000 to \$773,000.

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- (2) Under the terms of the lease, annual rent increases over the remaining term of the lease from \$217,000 to \$228,000.
- (3) Under the terms of the lease, annual rent increases over the remaining term of the lease from \$1.2 million to \$1.5 million.

We believe that our facilities are well maintained and generally adequate for our present and future anticipated needs.

The research and development activities at the Piscataway facility support the Products segment. The administrative functions in Bridgewater support all segments. The manufacturing facility in South Plainfield supports the Products segment.

In February 2007, our board of directors approved a plan to consolidate our manufacturing operations in Indianapolis, Indiana from our South Plainfield, New Jersey facility. We expect this consolidation to take approximately one year and that this change will help streamline operations and eliminate certain redundancies. We expect total cost of this restructuring will be between \$8.0 million and \$10.0 million in 2007 with a write-off of an estimated \$8.0 million related to the leased facility in 2008.

**Item 3. *Legal Proceedings***

There is no pending material litigation to which we are a party or to which any of our property is subject nor have we been required to pay any penalty to the U.S. Internal Revenue Service (IRS) for failure to make disclosures required with respect to certain transactions that have been identified by the IRS as abusive or that have a significant tax avoidance purpose.

**Item 4. *Submission of Matters to a Vote of Security Holders***

None.

**PART II**

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

**Market Information**

Our common stock is traded on the NASDAQ Global Market under the trading symbol ENZN .

The following table sets forth the high and low sale prices for our common stock during the year ended December 31, 2006, the six months ended December 31, 2005 and the year ended June 30, 2005, as reported by the NASDAQ Global Market. The quotations shown represent inter-dealer prices without adjustment for retail markups, markdowns or commissions, and may not necessarily reflect actual transactions.

	<b>High</b>	<b>Low</b>
<b>Year Ended December 31, 2006</b>		
First Quarter	\$ 8.35	\$ 6.50

Second Quarter	9.28	7.06
Third Quarter	8.49	7.12
Fourth Quarter	8.73	7.84
<b>Six Months Ended December 31, 2005</b>		
First Quarter (ended September 30, 2005)	\$ 8.35	\$ 6.36
Second Quarter (ended December 31, 2005)	7.73	6.59
<b>Year Ended June 30, 2005</b>		
First Quarter	\$ 16.10	\$ 11.01
Second Quarter	16.81	12.69
Third Quarter	14.07	10.02
Fourth Quarter	10.21	5.70

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(Includes reinvestment of dividends)****ANNUAL RETURN PERCENTAGE  
Periods Ending**

<b>Company/Index</b>	<b>6/03</b>	<b>6/04</b>	<b>6/05</b>	<b>12/05</b>	<b>12/06</b>
<b>ENZON PHARMACEUTICALS, INC.</b>	(50.04)	1.67	(49.22)	14.20	15.00
<b>NASDAQ U.S. INDEX</b>	11.02	26.05	1.08	7.53	9.87
<b>NASDAQ PHARMACEUTICAL INDEX</b>	38.32	11.46	(5.12)	19.73	(2.11)

**INDEXED RETURNS  
Periods Ending**

<b>Company/Index</b>	<b>Base Period 6/02</b>	<b>6/03</b>	<b>6/04</b>	<b>6/05</b>	<b>12/05</b>	<b>12/06</b>
<b>ENZON PHARMACEUTICALS, INC.</b>	100	49.96	50.80	25.80	29.46	33.88
<b>NASDAQ U.S. INDEX</b>	100	111.02	139.94	141.46	152.11	167.12
<b>NASDAQ PHARMACEUTICAL INDEX</b>	100	138.32	154.18	146.28	175.14	171.45

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***Holders***

As of February 28, 2007, there were 1,459 holders of record of our common stock.

***Dividends***

We have never declared or paid any cash dividends on our common stock and do not anticipate paying any cash dividends in the foreseeable future. We currently intend to retain future earnings to fund the development and growth of our business.

***Item 6. Selected Financial Data***

Set forth below is our selected financial data for the year ended December 31, 2006, the six-month period ended December 31, 2005 and the four fiscal years ended June 30, 2005 (in thousands, except per-share data):

<b>Year Ended December 31, 2006</b>	<b>Six Months Ended December 31, 2005(1)</b>	<b>2005</b>	<b>Year Ended June 30,</b>		<b>2002</b>
			<b>2004</b>	<b>2003(4)</b>	