

ANTIGENICS INC /DE/  
Form 10-K  
March 17, 2008  
[Table of Contents](#)

**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, 2007

or

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

For the transition period from \_\_\_\_\_ to \_\_\_\_\_

Commission File Number: 000-29089

**Antigenics Inc.**

*(exact name of registrant as specified in its charter)*

**Delaware**  
*(State or other jurisdiction of*

**06-1562417**  
*(I.R.S. Employer*

*incorporation or organization)*

*Identification No.)*

**162 Fifth Avenue, Suite 900, New York, New York 10010**

*(Address of principal executive offices, including zip code)*

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Registrant's telephone number, including area code:

(212) 994-8200

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

Common Stock, \$.01 Par Value

(Title of each class)

The NASDAQ Global Market

(Name of each exchange on which registered)

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 Act. Yes ☐ No ☒

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

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer," and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☐ Accelerated filer ☒ Non-accelerated filer ☐ Smaller reporting company ☐

(Do not check if a smaller

reporting company)

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

The aggregate market value of voting stock held by non-affiliates of the registrant as of June 30, 2007 was: \$97,351,629. There were 56,587,550 shares of the registrant's Common Stock outstanding as of March 1, 2008.

**DOCUMENTS INCORPORATED BY REFERENCE**

Portions of the definitive proxy statement for the registrant's 2008 Annual Meeting of Stockholders to be held on June 4, 2008, which definitive proxy statement will be filed with the Securities and Exchange Commission not later than 120 days after the registrant's fiscal year end of December 31, 2007, are incorporated by reference into Part III of this Annual Report on Form 10-K.

**Table of Contents**

**TABLE OF CONTENTS**

|          |                                                                                                                     | <b>Page</b> |
|----------|---------------------------------------------------------------------------------------------------------------------|-------------|
|          | <b>PART I</b>                                                                                                       |             |
| ITEM 1.  | <u>BUSINESS</u>                                                                                                     | 3           |
|          | <u>Our Business</u>                                                                                                 | 3           |
|          | <u>Our Products Under Development</u>                                                                               | 3           |
|          | <u>Intellectual Property Portfolio</u>                                                                              | 14          |
|          | <u>Regulatory Compliance</u>                                                                                        | 17          |
|          | <u>Competition</u>                                                                                                  | 20          |
|          | <u>Employees</u>                                                                                                    | 21          |
|          | <u>Corporate History</u>                                                                                            | 21          |
|          | <u>Availability of Periodic SEC Reports</u>                                                                         | 21          |
| ITEM 1A. | <u>RISK FACTORS</u>                                                                                                 | 21          |
| ITEM 1B. | <u>UNRESOLVED STAFF COMMENTS</u>                                                                                    | 39          |
| ITEM 2.  | <u>PROPERTIES</u>                                                                                                   | 39          |
| ITEM 3.  | <u>LEGAL PROCEEDINGS</u>                                                                                            | 40          |
| ITEM 4.  | <u>SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS</u>                                                          | 41          |
|          | <b>PART II</b>                                                                                                      |             |
| ITEM 5.  | <u>MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES</u> | 43          |
| ITEM 6.  | <u>SELECTED FINANCIAL DATA</u>                                                                                      | 45          |
| ITEM 7.  | <u>MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS</u>                        | 47          |
| ITEM 7A. | <u>QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK</u>                                                   | 62          |
| ITEM 8.  | <u>FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA</u>                                                                  | 63          |
| ITEM 9.  | <u>CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE</u>                         | 98          |
| ITEM 9A. | <u>CONTROLS AND PROCEDURES</u>                                                                                      | 98          |
| ITEM 9B. | <u>OTHER INFORMATION</u>                                                                                            | 100         |
|          | <b>PART III</b>                                                                                                     |             |
| ITEM 10. | <u>DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE</u>                                                       | 100         |
| ITEM 11. | <u>EXECUTIVE COMPENSATION</u>                                                                                       | 100         |
| ITEM 12. | <u>SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS</u>               | 100         |
| ITEM 13. | <u>CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE</u>                                    | 100         |
| ITEM 14. | <u>PRINCIPAL ACCOUNTANT FEES AND SERVICES</u>                                                                       | 100         |
|          | <b>PART IV</b>                                                                                                      |             |
| ITEM 15. | <u>EXHIBITS, FINANCIAL STATEMENT SCHEDULES</u>                                                                      | 101         |
|          | <u>15(a)(1) Financial Statements</u>                                                                                | 101         |
|          | <u>15(a)(2) Financial Statement Schedules</u>                                                                       | 101         |
|          | <u>15(a)(3) Exhibits</u>                                                                                            | 101         |
|          | <u>15(b) Exhibits</u>                                                                                               | 101         |

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**Table of Contents**

**NOTE REGARDING FORWARD-LOOKING STATEMENTS**

This Annual Report on Form 10-K contains forward-looking statements. Generally, these statements can be identified by the use of terms like believe, expect, anticipate, plan, may, will, could, estimate, potential, opportunity, future, project, and similar terms.

Forward-looking statements include, but are not limited to, statements about generating royalty revenue from QS-21 in the 2010 timeframe, our plans or timelines for performing and completing research, preclinical studies and clinical trials, timelines for releasing data from clinical trials, plans or timelines for initiating new clinical trials, expectations regarding research, preclinical studies, clinical trials and regulatory processes (including additional clinical studies for Oncophage in renal cell carcinoma and our application for marketing approval in Russia), expectations regarding test results, future product research and development activities, the expected effectiveness of therapeutic drugs, vaccines, and combinations in treating diseases, applicability of our heat shock protein technology to multiple cancers and infectious diseases, competitive position, plans for regulatory filings and meetings with regulatory authorities (including potential requests for meetings with regulatory authorities including the U.S. Food and Drug Administration (the FDA) regarding Oncophage clinical studies), the sufficiency of our clinical trials in renal cell carcinoma and melanoma, or subgroup analyses of data from these trials, to support a biologics license application (BLA) or foreign marketing application for product approval, possible receipt of future regulatory approvals, the performance of collaborative partners in, and revenue expectations from, our strategic license and partnering collaborations, expected liquidity and cash needs, plans to commence, accelerate, decelerate, postpone, discontinue, or resume clinical programs, and reduction of our net cash burn (cash used in operating activities plus capital expenditures, debt repayments, and dividend payments), plans for sales and marketing, implementation of corporate strategy, increased foreign currency exposure if we commercialize in Russia, and future financial performance.

These forward-looking statements involve a number of risks and uncertainties that could cause actual results to differ materially from those suggested by the forward-looking statements. These risks and uncertainties include, among others, that clinical trials may not demonstrate that our products are both safe and more effective than current standards of care; that the subgroup analyses of our Oncophage clinical trials do not predict survival or efficacy of the product in future studies or use of Oncophage; that we may be unable to obtain sufficient funding or the regulatory authorization necessary to conduct additional clinical trials; that we may not be able to enroll sufficient numbers of patients in our clinical trials; that we may be unable to obtain the regulatory review or approval necessary to commercialize our product candidates because regulatory agencies are not satisfied with our trial protocols or the results of our trials; that we may fail to adequately protect our intellectual property or that it is determined that we infringe on the intellectual property of others; our strategic licenses and partnering collaborations may not meet expectations; manufacturing problems may cause product development and launch delays and unanticipated costs; our ability to raise additional capital; our ability to attract and retain key employees; changes in financial markets, regulatory requirements, and geopolitical developments; the solvency of counter parties under material agreements, including subleases; and general real estate risks.

We have included more detailed descriptions of these risks and uncertainties and other risks and uncertainties applicable to our business in Item 1A. Risk Factors of this Annual Report on Form 10-K. We encourage you to read those descriptions carefully. We caution investors not to place significant reliance on forward-looking statements contained in this document; such statements need to be evaluated in light of all the information contained in this document. Furthermore, the statements speak only as of the date of this document, and we undertake no obligation to update or revise these statements.

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## **Table of Contents**

### **PART I**

#### **Item 1. Business** **Our Business**

##### ***Overview***

Antigenics Inc. (including its subsidiaries, also referred to in this Annual Report on Form 10-K as Antigenics, the Company, we, us, and our biotechnology company developing technologies and product candidates to treat cancers and infectious diseases, primarily based on immunological approaches. Our most advanced product candidate is Oncophage® (vitespen), a patient-specific therapeutic cancer vaccine candidate that has been tested, or is currently being tested, in several cancer indications, including in Phase 3 clinical trials for the treatment of renal cell carcinoma, the most common type of kidney cancer, and for metastatic melanoma. Oncophage has also been tested in Phase 1 and Phase 2 clinical trials in a range of indications and is currently being tested in a Phase 1/2 clinical trial in recurrent glioma, or brain cancer. Our product candidate portfolio also includes: (1) QS-21 Stimulon® adjuvant (QS-21), an investigational adjuvant used in numerous vaccines under development for a variety of diseases including, but not limited to, hepatitis, human immunodeficiency virus, influenza, cancer, Alzheimer's disease, malaria, and tuberculosis; (2) AG-707, a therapeutic vaccine program in a Phase 1 clinical trial for the treatment of genital herpes; and (3) Aroplatin, a liposomal chemotherapeutic in a Phase 1 clinical trial for the treatment of solid tumors and B-cell lymphomas. Our related business activities include research and development, regulatory and clinical affairs, manufacturing, business development, marketing, and administrative functions that support these activities.

#### **Our Products Under Development**

##### ***Introduction***

Oncophage is a patient-specific therapeutic cancer vaccine that is based on a heat shock protein called gp96 and has been studied in Phase 3 clinical trials for the treatment of renal cell carcinoma and metastatic melanoma. Oncophage has received Fast Track designation and Orphan Drug designation from the FDA for both renal cell carcinoma and metastatic melanoma. Oncophage has Orphan Drug status for renal cell carcinoma from the European Medicines Agency (EMA).

In our studies to date, Oncophage has shown that it appears to have a favorable safety profile. The most common side effects have been mild to moderate injection site reactions and transient low-grade fevers. We believe that this human data further supports the broad applicability and corresponding commercial potential of our heat shock protein product candidates.

QS-21 is an investigational adjuvant being studied by our collaborative partners in both therapeutic and prophylactic vaccines to enhance immune response to the vaccines. In July 2006, we entered into an expanded license agreement (the GSK license agreement) and an expanded Manufacturing Technology Transfer and Supply Agreement (the GSK supply agreement) with GlaxoSmithKline Biologicals SA (GSK) for the use of QS-21. QS-21 is a key component included in several proprietary adjuvant systems. We have executed license agreements with other companies, including but not limited to, Elan Corporation, plc, through its affiliate Elan Pharmaceuticals International Limited (Elan), and Acambis plc (Acambis) for the right to use QS-21 in their vaccines.

AG-707 is our therapeutic vaccine program for the treatment of genital herpes. AG-707 is a multivalent vaccine (a type of vaccine that addresses multiple components of the virus) that consists of a heat shock protein (Hsc70) associated with multiple synthetic herpes simplex virus-2 peptides. Based on the results of completed toxicology studies and other preclinical activities, we are studying AG-707 in an ongoing Phase 1 clinical trial in patients with genital herpes.

Aroplatin is a novel liposomal third-generation platinum chemotherapeutic that has been studied by Antigenics in two Phase 1 trials of patients with colorectal cancer and other solid tumors and in one Phase 2 trial of patients with advanced colorectal cancer unresponsive to medical treatment. A new formulation of Aroplatin is

## **Table of Contents**

currently being evaluated in a Phase 1 dose-escalation trial in solid malignancies and Non-Hodgkin's lymphoma ( NHL ). Platinum chemotherapeutics are cancer drugs containing the metallic element platinum, which has been shown to have some anti-cancer effects. In the case of Aroplatin, the active platinum drug component is encapsulated in a liposome, which is a spherical particle of phospholipids that are components of human cell membranes.

Through our preclinical research programs, we may develop additional novel compounds to treat cancer, infectious diseases, and autoimmune disorders that are designed to be more efficacious and safer than conventional therapies. In addition, we have studied the effect of Oncophage in combination with other agents in preclinical cancer models and are developing process improvements for the production of Oncophage.

For the years ended December 31, 2007, 2006, and 2005, our research and development costs were approximately \$21.8 million, \$28.6 million, and \$47.1 million, respectively.

### ***Heat Shock Protein Technology***

Heat shock proteins, also known as HSPs, are also called stress proteins, as their expression is increased when cells experience various stresses like extremes of temperature (hot or cold) and oxygen deprivation. HSPs are present in all cells in all life forms from bacteria to mammals, and their structure and function are similar across these diverse life forms. Under normal conditions, HSPs play a major role in protein folding and transport of protein fragments called peptides within a cell, and are thus also known as chaperones. Antigenic peptides are also transported by these chaperones, and are those portions of a protein that stimulate immune responses when recognized by the immune cells. Because HSPs interact with and bind many cellular proteins and peptides, they chaperone a broad array of antigenic peptides to facilitate their recognition by the immune system. Thus, HSPs play an integral role in capturing and presenting the antigenic fingerprint of a cell to a host's immune system.

Although HSPs are normally found inside cells, they also provide important danger signals when found extracellularly, meaning outside of cells. Detection of HSPs outside of cells is indicative that cell death has occurred. This may have been caused by disease, mutation, or injury, whereby a cell's contents are spilled into body tissue. Extracellular HSPs send powerful danger signals to the immune system that initiate a cascade of events capable of generating a targeted immune response against the infection or disease-related cell death.

Combined, the intracellular and extracellular functions of HSPs form the basis of our technology. The chaperoning nature of HSPs allows us to produce vaccines containing the antigenic fingerprint of a given disease. In the case of cancer, the vaccines are patient-specific, consisting of HSPs purified from a patient's tumor cells, to which remain bound, or complexed, the broad array of peptides that characterize the patient's tumor. These heat shock protein-peptide complexes, also known as HSPPCs, when injected into the skin, are expected to stimulate a powerful cellular immune response potentially capable of targeting and killing the cancer cells from which these complexes were derived. Because cancer is a highly variable disease from one patient to another, due to rapid mutation of cancer cells, we believe that a patient-specific vaccination approach is required to generate a more robust and targeted immune response against the disease.

For certain diseases, such as genital herpes, we do not believe that a personalized vaccination approach is required, since the pathogen does not vary as greatly from patient to patient as do cancer cells. For example, in our AG-707 product candidate for the treatment of genital herpes, we complex, or bind, several defined antigenic herpes peptides to an HSP (Hsc70) that we genetically engineer, creating an HSPPC. This HSPPC, when injected into the skin, is designed to elicit a cellular immune response to the synthetic peptides carried by the HSP.

**Table of Contents****Product Development Portfolio**

Below is a table showing the clinical trials completed or ongoing with our lead product candidates under development by Antigenics.

| PRODUCT PIPELINE |                                     | Phase 1 | Phase 2 | Phase 3 |
|------------------|-------------------------------------|---------|---------|---------|
| <b>Oncophage</b> | Renal cell carcinoma                |         |         | •       |
|                  | Metastatic melanoma                 |         |         | •       |
|                  | Glioma (a)(c)(d)                    |         | •       |         |
|                  | Colorectal cancer                   |         | •       |         |
|                  | NHL                                 |         | •       |         |
|                  | Gastric cancer (a)                  |         | •       |         |
|                  | Metastatic renal cell carcinoma (b) |         | •       |         |
|                  | Lung cancer                         |         | •       |         |
|                  | Metastatic melanoma (a)             |         | •       |         |
|                  | Pancreatic cancer                   | •       |         |         |
| <b>Aroplatin</b> | Colorectal cancer                   |         | •       |         |
|                  | Solid tumors/NHL (c)                | •       |         |         |
|                  | Solid tumors                        | •       |         |         |
| <b>AG-707</b>    | Genital herpes (c)                  | •       |         |         |

(a) Phase 1/2 trials.

(b) Includes two separate Phase 1/2 and Phase 2 trials.

(c) Enrollment is ongoing.

(d) Investigator-sponsored trial.

**Oncophage****Introduction**

Oncophage, our most advanced product candidate, is a patient-specific therapeutic cancer vaccine that is based on heat shock protein gp96 and has been studied in Phase 3 clinical trials for the treatment of renal cell carcinoma and metastatic melanoma. Each Oncophage vaccine is made from a patient's tumor tissue. After a surgeon removes a patient's tumor, a portion of that tumor tissue is frozen and shipped overnight to our manufacturing facility in Massachusetts. In our Phase 3 trials, we have required a minimum of five to seven grams of tumor tissue to yield a sufficient amount of Oncophage for clinical use.

Using a proprietary manufacturing process that takes approximately eight to 10 hours per individual patient lot, we isolate the HSPPCs from the tumor tissue. Through this isolation process, the HSPPCs are extracted and purified from the tumor tissue, then formulated in sterile saline solution and packaged in standard single-injection vials. After the performance of quality control testing, including sterility testing, we ship Oncophage frozen back to the hospital pharmacy for administration after a patient has recovered from surgery, which is usually four to six weeks later. A medical professional administers Oncophage by injecting the product into the skin weekly for four weeks and every other week thereafter until that patient's supply of Oncophage is depleted.

Although we believe that our technology is applicable to all cancer types, our initial focus with Oncophage is on cancers that have poor or no available treatment options and that typically yield larger quantities of tumor tissue from the surgical procedure.

We filed an investigational new drug application (IND) for Oncophage in November 1996 that the FDA allowed on December 20, 1996. We started enrolling patients in our first clinical trial at Memorial Sloan-Kettering Cancer Center in New York, New York in November 1997. To date, we have treated over 750 cancer

**Table of Contents**

patients with Oncophage in our clinical trials. Because Oncophage is a novel therapeutic cancer vaccine that is patient-specific, meaning it is derived from the patient's own tumor, it may experience a long regulatory review process and high development costs, either of which could delay or prevent our commercialization efforts. For additional information regarding regulatory risks and uncertainties, please read the risks identified under Risk Factors.

**Oncophage Clinical Programs*****Early-Stage Clinical Trials***

The following table summarizes the results from the key ongoing or completed Phase 1, Phase 1/2, and Phase 2 trials to date. These results include complete disappearance (a complete response), substantial shrinkage (partial response), minor shrinkage (minor response), or no change in the size (disease stabilization) of tumor lesions.

|                                                    |       |                  | Trial Median TTP or                                                |                                                                     |
|----------------------------------------------------|-------|------------------|--------------------------------------------------------------------|---------------------------------------------------------------------|
| Indication (Protocol)                              | Phase | Patients Treated | Median OS                                                          | Trial Results                                                       |
| Metastatic renal cell carcinoma<br>(C-100-03)      | 1/2   | 38               | TTP: 2.9 m                                                         | 1 complete response                                                 |
|                                                    |       |                  | OS: 15 m                                                           | 2 partial responses                                                 |
|                                                    |       |                  |                                                                    | 9 disease stabilizations                                            |
|                                                    |       |                  |                                                                    | 1 patient alive at >5 y                                             |
| Metastatic renal cell carcinoma<br>(C-100-07)      | 2     | 72               | OS: 16 m                                                           | Of 58 evaluable patients:                                           |
|                                                    |       |                  |                                                                    | 2 complete responses                                                |
|                                                    |       |                  |                                                                    | 2 partial responses                                                 |
|                                                    |       |                  |                                                                    | 1 minor response                                                    |
|                                                    |       |                  |                                                                    | 7 disease stabilizations                                            |
|                                                    |       |                  |                                                                    | 6 patients alive at >4.9 y; 1 of them alive >5.4 y                  |
| Metastatic melanoma<br>(C-100-06)                  | 1/2   | 45               | OS: 1.3 y                                                          | 1 complete response                                                 |
|                                                    |       |                  |                                                                    | 9 disease stabilizations                                            |
|                                                    |       |                  |                                                                    | 3 patients alive at 4 y                                             |
|                                                    |       |                  |                                                                    | 1 patient alive at 4.7 y                                            |
| Locally advanced/metastatic melanoma<br>(C-100-02) | 1/2   | 36               | OS: 2.1 y                                                          | 1 patient alive at 6 y                                              |
|                                                    |       |                  |                                                                    | 10 patients alive at 5 y                                            |
| Recurrent, high-grade glioma<br>(C-100-34)         | 1/2   | 12               | OS: 11/12 patients alive more than 6.5 m (from time of recurrence) | Study ongoing. Preliminary results:                                 |
|                                                    |       |                  |                                                                    | 12 patients demonstrated significant tumor-specific immune response |
| Investigator-reported data                         |       |                  |                                                                    |                                                                     |



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|                                                   |     |    |                                                     |                                                                                                      |
|---------------------------------------------------|-----|----|-----------------------------------------------------|------------------------------------------------------------------------------------------------------|
| <b>Stage I/II/IIIA non-small cell lung cancer</b> | 2   | 10 | Study closed to enrollment; data collection ongoing | Study closed to enrollment; data collection ongoing                                                  |
| (C-100-26)                                        |     |    |                                                     |                                                                                                      |
| <b>Liver metastases from colorectal cancer</b>    | 2   | 40 | OS: 2.9 y                                           | 1 patient alive at 4.9 y                                                                             |
| (C-100-05)                                        |     |    |                                                     | 11 patients alive at 4 y                                                                             |
|                                                   |     |    |                                                     | At 3.5 y, 78% of patients with tumor-specific T cell response were alive vs. 17% of patients without |
| <b>Resectable gastric cancer</b>                  | 1/2 | 20 | OS: 2.9 y                                           | 1 patient alive at 5 y                                                                               |
| (C-100-04)                                        |     |    |                                                     | 2 patients alive at 4 y                                                                              |
| <b>Indolent non-Hodgkin s lymphoma</b>            | 2   | 17 | TTP: 5.8 m                                          | Of 12 evaluable patients:                                                                            |
| (C-100-09)                                        |     |    |                                                     | 1 disease stabilization                                                                              |
| <b>Resectable pancreatic cancer</b>               | 1   | 11 | OS: 2.2 y                                           | Of 10 evaluable patients:                                                                            |
| (C-100-01)                                        |     |    |                                                     | 1 patient alive at 5 y                                                                               |
|                                                   |     |    |                                                     | 2 patients alive at 2.6 y                                                                            |

## **Table of Contents**

Table index:

TTP: time to tumor progression

OS: overall survival

m: months

y: years

Our Phase 1/2 clinical trial in recurrent, high-grade glioma is currently our only ongoing early-stage clinical trial. This study is being lead by the Brain Tumor Research Center at the University of California, San Francisco, with grants from the American Brain Tumor Association and the National Cancer Institute Special Programs of Research Excellence. Phase 1 results, presented at the International Conference on Molecular Targets and Cancer Therapeutics showed that 11 out of 12 patients exceeded the historical median benchmark of 6.5 months survival from time of recurrence. The study also showed that all 12 treated patients demonstrated a significant immune response after vaccination with Oncophage ( $P < 0.001$ ) and that patients with minimal residual disease at time of first vaccination ( $n = 7$ ) were more likely to survive beyond nine months compared with patients with significant residual disease. The study has progressed to the Phase 2 portion, which is designed to enroll 30 patients.

We believe that the collective results from these clinical trials show that Oncophage has a favorable safety profile. We also believe that these results show that treatment with Oncophage can generate immunological and anti-tumor responses.

### ***Phase 3 Renal Cell Carcinoma Program***

*Background.* Renal cell carcinoma is the most common type of kidney cancer. The American Cancer Society estimates that there will be 54,390 new cases of kidney cancer in the United States in 2008 and about 13,010 people will die from the disease in 2008. GLOBOCAN, a database developed by the World Health Organization's International Agency for Research on Cancer, estimates that there were 58,747 new cases of kidney cancer in the European Union and 16,329 new cases in Russia in 2002. Renal cell carcinoma accounts for about 90 percent of all kidney tumors. By the time renal cell carcinoma is diagnosed in these patients, about one-third of them will have developed metastatic disease. The current standard of care for patients with non-metastatic renal cell carcinoma consists of nephrectomy, meaning the surgical removal of the kidney, followed by observation. For patients with metastatic disease, FDA-approved treatments include intravenous high-dose interleukin-2, or IL-2, Nexavar (sorafenib), Sutent (sunitinib), and Torisel (temsirolimus).

Oncophage has received Fast Track designation for the treatment of renal cell carcinoma from the FDA. It was the first patient-specific therapeutic cancer vaccine to receive Fast Track designation. Oncophage has also received Orphan Drug status in renal cell carcinoma from the FDA and from the EMEA.

We initiated a Phase 3, multicenter, international trial for non-metastatic renal cell carcinoma in 2000 into which the first patient was randomized in February 2001. We did not submit a special protocol assessment to the FDA for this trial, as the guidance for such was not finalized until May 2002. Such an assessment would generally seek confirmation that the FDA would consider the clinical trial protocol acceptable for purposes of product approval. We conducted this trial at sites located in the following countries: USA, Canada, Belgium, Germany, France, Austria, Sweden, Switzerland, Norway, Spain, UK, Netherlands, Israel, Russia, and Poland. In addition, we commenced study initiation activities in a part II Phase 3 trial in February 2005. The FDA has indicated that, by itself, part I of our Phase 3 clinical trial in renal cell carcinoma is not sufficient to support a BLA filing.

On March 24, 2006, we announced top-line results from part I of our Phase 3 study of Oncophage in renal cell carcinoma patients who are at high risk of recurrence after surgery, and disclosed that the trial did not meet its primary endpoint. We also announced the termination of part II of the trial. The analysis was triggered based



## **Table of Contents**

on the number of events (defined as recurrence of disease or death of a patient prior to recurrence) reported by study investigators. However, an independent review by the trial's Clinical Events Committee revealed that substantially fewer events had actually occurred. The analysis showed a trend in favor of Oncophage for recurrence-free survival (RFS, the study's primary endpoint), and a trend against Oncophage for overall survival (OS, a secondary endpoint); however neither finding was statistically significant. The analysis of the OS endpoint was considered an interim assessment. It was unclear why opposing trends were observed between RFS and OS at that time. Importantly, there was no readily apparent adverse safety signal associated with the vaccine that we believe contributed to this finding.

We conducted an in-depth analysis of data from part I of our Phase 3 study of Oncophage in renal cell carcinoma during April and May 2006 and discussed the results with the FDA and a panel of experts in this medical field. On June 7, 2006, we announced the findings of the analysis. With regard to the primary endpoint, RFS, the analysis showed that there was no statistically significant difference between the two arms in the intent-to-treat population of 728 patients. However, analysis of RFS in a subgroup of better-prognosis patients randomized in the trial who were at intermediate risk of recurrence showed significant improvement (nominal, two-sided *P* value of 0.018 and hazard ratio of 0.567) in favor of the Oncophage arm. The subgroup consisted of 361 patients, or 60% of the 604 patients in the full analysis set (FAS) population. As defined by FDA-issued guidance, the FAS is the set of subjects that is as close as possible to the ideal implied by the intention-to-treat principle. It is derived from the set of all randomized subjects by minimal and justified elimination of subjects. In this case, patients with baseline disease, who were not eligible for the trial per protocol, were excluded from the FAS population. In this 361-patient subgroup, patients receiving Oncophage had a 44% decreased risk of recurrence compared with patients in the observation arm.

We continued to collect data per the protocol through March 2007, and on May 21, 2007 we announced additional follow-up data. The end-of-study results, which reflected an additional 17 months' data collection, showed that in the intent-to-treat population, no statistically significant difference was found between the two arms. In the subset of better-prognosis patients (*n* = 362) at intermediate risk for disease recurrence, patients in the Oncophage arm continued to demonstrate significant improvement in RFS of approximately 45 percent (*P* value of less than 0.01 and hazard ratio of 0.55). In addition, updated analysis in this group of intermediate risk patients revealed a trend toward improved OS, the study's secondary endpoint. The positive OS trend observed appeared to correlate with the RFS improvement demonstrated in previous analyses. The results announced in June 2006 reported that a total of 361 patients in the subgroup were defined as having intermediate risk for recurrence of disease. In subsequent follow-up, one patient was recategorized, resulting in an increase in the total number of patients from 361 to 362 in the later analysis.

The Eastern Cooperative Oncology Group is currently sponsoring a large adjuvant renal cell carcinoma trial that stratifies patients by certain prognostic risk factors for recurrence, and puts patients into intermediate risk, high risk, and very high risk categories. We are able to apply these definitions to the data generated as part of our Phase 3 trial of Oncophage in renal cell carcinoma and it is in the intermediate risk, or better prognosis population, where significant improvement over observations is demonstrated.

We continue to analyze the data collected to date, and we have opened a subsequent protocol that will continue to follow patients in the format of a registry in order to collect OS information, as well as investigator reports of disease recurrence. The registry, which is expected to provide additional data on the effectiveness of Oncophage, will follow patients for an additional three years from closure of the initial trial, providing more than five years of data collection following the enrollment of the last patient in the trial. In addition to the patient registry, we intend to initiate a small study in non-metastatic renal cell carcinoma that measures immunological data in the intermediate-risk patient population. This continued data collection and our ongoing analysis is uncertain, and may negatively affect or not affect the acceptability of the overall results of the trial, and even if clinically meaningful, may not meet the requirements of the FDA or other regulatory authorities for submission and approval of a marketing application or similar ex-U.S. applications for product approval.

## **Table of Contents**

Guidance received from past discussions with the FDA indicates that further clinical studies must be conducted to demonstrate to them the efficacy and safety of Oncophage. At the appropriate time, we intend to seek a meeting with the FDA to discuss the results of the updated analyses utilizing data through March 2007 to determine whether there is an opportunity to file a BLA on the basis of these results with appropriate commitments to conduct further clinical investigations to support the efficacy of Oncophage in renal cell carcinoma. Because evidence of clinically significant improvement has been observed in a subgroup analysis and was not demonstrated in the pre-specified analysis of the primary and secondary endpoints of the Phase 3 study of Oncophage in renal cell carcinoma, this trial is likely not sufficient to support a BLA for product approval, based on existing standards. Furthermore, this trial may not be sufficient to support approval outside of the U.S.

### ***Registrational Efforts in Renal Cell Carcinoma***

We are exploring the steps necessary to seek approval of Oncophage in ex-U.S. markets. This exploration process includes, but is not limited to, formal and informal discussions with international regulatory authorities, key opinion leaders, and consultants with country-specific regulatory experience regarding potential applications for full or conditional marketing approvals and/or named patient programs. In conjunction with this process, on June 25, 2007, we completed the submission of an application for marketing authorization with the Russian Ministry of Public Health for the use of Oncophage in the treatment of kidney cancer patients at intermediate risk for disease recurrence. Until we receive an official decision from the Russian Ministry of Public Health, we cannot be certain of the outcome.

We are in the process of preparing to file a marketing authorization application in Europe for conditional authorization of Oncophage as an adjuvant treatment for kidney cancer patients. Conditional authorization, a relatively new provision, would allow for commercialization of a product with post approval commitments that include annual regulatory evaluation until those commitments are fulfilled. We intend to file the application in the second half of 2008. Preparations associated with filing a marketing application require a multitude of activities, including opening a dialogue with the relevant regulatory agency. Based on these on-going discussions, decisions regarding the intended date of a filing and/or the decision to file at all can be influenced or changed at any time.

### ***Melanoma***

*Background.* Melanoma is the most serious form of skin cancer. According to the American Cancer Society, melanoma accounts for only about three percent of skin cancer cases, yet it causes most skin cancer deaths. The American Cancer Society also estimates that physicians will diagnose about 62,480 new cases of melanoma in the United States in 2008 and that the disease will kill approximately 8,420 people in 2008. The incidence of melanoma is growing at a rate of approximately three percent per year based on a report from the American Cancer Society.

Oncologists treat advanced or metastatic melanoma, also known as stage III or stage IV, with surgery, radiation therapy, immunotherapy, or chemotherapy, depending on the case. Approximately 15% of all melanoma patients at the time of their first diagnosis have stage III or stage IV disease. Existing treatments have not significantly improved overall survival of patients with metastatic melanoma. The median survival time of patients with stage III melanoma varies widely according to published literature. According to published literature, the median survival time of patients with late-stage III melanoma is about 24 months and patients with stage IV melanoma have a median survival time of about seven months. Although oncologists use various treatments, the only FDA-approved therapies for patients with metastatic melanoma are high-dose intravenous interleukin-2 and alpha interferon, another human cytokine.

Oncophage has received Fast Track designation and Orphan Drug status from the FDA for the treatment of metastatic melanoma. In February 2002, we initiated a multicenter, international Phase 3 trial in metastatic melanoma. We conducted this trial at sites located in the following countries: USA, UK, Italy, Poland, Sweden, Hungary, Australia, Russia, and Ukraine. We believe this study does not qualify as registrational due to the relatively high failure rate in vaccine manufacturing.

## **Table of Contents**

During the quarter ended September 30, 2004, we completed enrollment of our Phase 3 trial in metastatic melanoma. Our overall manufacturing success rate for this trial was approximately 70%, and as a result during 2004 we indicated that we did not believe this trial would qualify as registrational. In October 2005, we announced preliminary survival data from this trial, and updated findings were presented on June 5, 2006 at the 39th annual meeting of the American Society of Clinical Oncology. Overall, patients in the intent-to-treat Oncophage arm (M1a, b, and c combined categories as defined by the American Joint Committee on Cancer) fared similarly to those in the physician's choice arm in terms of survival, the primary endpoint. Landmark analyses were utilized to aid in exploring dose response (the landmark was set at day 150, which means that a patient had to survive at least 150 days in both arms to be considered for the analysis). The day-150 landmark represents the average time it would take for a patient to receive 10 injections of Oncophage. Using this analysis approach, it was observed that overall median survival time for a subgroup of patients who received at least 10 injections of Oncophage increased by approximately 29% in the Oncophage-treated arm as compared with those in the physician's choice treatment arm (16.5 months versus 12.8 months). These findings also noted that in a subgroup of randomized stage IV M1a and M1b combined patients who received at least 10 doses of Oncophage vaccine, median survival time increased by approximately 143% in the Oncophage-treated arm compared with those in the physician's choice treatment arm (31.2 months versus 12.8 months; nominal, one-sided *P* value of 0.017 and hazard ratio of 0.452). This analysis was not pre-specified. The physician's choice treatment arm included the current array of therapies such as chemotherapeutics, biological agents, and/or surgery. This OS analysis of the primary endpoint on an intent-to-treat basis was not statistically significant. These Phase 3 metastatic melanoma trial results were published in the February 20, 2008 issue of the *Journal of Clinical Oncology*. No additional studies in metastatic melanoma are planned at this time.

## ***Manufacturing***

Oncophage is manufactured in our 162,000 square-foot manufacturing and research and development facility in Lexington, Massachusetts. We estimate that the facility's current capacity for Oncophage is approximately 10,000 patient courses per year, expandable to approximately 200,000 patient courses per year, by building-out available space, adding second and third shifts, and automating various functions. On average, it takes eight to 10 hours of direct processing time to manufacture a patient batch of Oncophage. As of December 31, 2007, we had eight employees in our manufacturing department.

After manufacturing, Oncophage is tested and released by our quality systems staff. The quality control organization, consisting of six employees as of December 31, 2007, performs a series of release assays designed to ensure that the product meets all applicable specifications. Our quality assurance staff, consisting of five employees as of December 31, 2007, also reviews manufacturing and quality control records prior to batch release in an effort to assure conformance with current Good Manufacturing Practices, also known as cGMP, as mandated by the FDA and foreign regulatory agencies.

Our Oncophage manufacturing staff is rigorously trained and routinely evaluated for conformance to manufacturing procedures and quality standards. This oversight is intended to ensure compliance with FDA regulations and to provide consistent vaccine output. Our quality control and quality assurance staff is similarly trained and evaluated as part of our effort to ensure consistency in the testing and release of the product, as well as consistency in materials, equipment, and facilities.

## **QS-21**

### ***Introduction***

QS-21 is an adjuvant, or a substance added to vaccines and other immunotherapies, that is designed to enhance the body's immune response to the antigen contained within the treatment. QS-21 is best known for its ability to stimulate antibody, or humoral, immune response, and has also been shown to activate cellular immunity. A natural product, QS-21 is a triterpene glycoside, or saponin, a natural compound purified from the

## **Table of Contents**

bark of a South American tree called *Quillaja saponaria*. It is sufficiently characterized with a known molecular structure, thus distinguishing it from other adjuvant candidates, which are typically emulsions, polymers or biologicals.

QS-21 has been tested in approximately 175 clinical trials involving, in the aggregate, over 9,000 subjects in a variety of cancer indications, infectious diseases, and other disorders. These studies have been carried out by academic institutions predominantly located in the United States and by pharmaceutical companies at more than 20 international sites. A number of these studies have shown QS-21 to be significantly more effective in stimulating antibody responses than aluminum hydroxide or aluminum phosphate, the adjuvants most commonly used in approved vaccines in the United States today. None of these QS-21 trials performed to date have been pivotal.

### ***Partnered QS-21 Programs***

A number of pharmaceutical and biotechnology companies have licensed QS-21 for use in vaccines to treat a variety of human diseases. Companies with QS-21 programs include GSK, Elan, and Acambis. In return for rights to use QS-21, these companies have generally agreed to pay us license fees, manufacturing payments, milestone payments, and royalties on product sales for a minimum of 10 years after commercial launch. In addition to our corporate licensing arrangements, we have developed a number of academic collaborations to test new vaccine concepts and products containing QS-21. There are approximately 15 vaccines in clinical development that contain QS-21.

*GSK.* In July 2006, we entered into the GSK license agreement and the GSK supply agreement for the use of QS-21. Under the terms of the agreements, we agreed to supply QS-21 to GSK through 2014. In addition, we agreed to transfer manufacturing technologies under the GSK supply agreement. We will receive payments contingent upon successful milestone achievements and royalties on net sales for a period of at least 10 years after the first commercial sale under the GSK supply agreement. In July 2007, we executed a binding letter of intent with GSK amending the GSK supply agreement to accelerate GSK's commercial-grade QS-21 manufacturing rights. We received a \$2.0 million up-front non-refundable payment from GSK in August 2007, in lieu of a milestone payment that would otherwise have been payable under the GSK supply agreement. In addition, GSK is obligated to make payments to us totaling \$5.25 million through December 2012, for manufacturing profits that were anticipated to have otherwise been payable under the GSK supply agreement. Except as expressly provided in the letter, all other financial obligations of GSK under the GSK supply agreement, including royalty payments, remain unchanged. We understand that QS-21 is a key component included in several of GSK's proprietary adjuvant systems and that a number of GSK's vaccine candidates currently under development are formulated using adjuvant systems containing QS-21. GSK has initiated a Phase 3 study evaluating its investigational MAGE-A3 Antigen-Specific Cancer Immunotherapeutic containing QS-21 in non-small cell lung cancer. GSK has also released data from a Phase 2 study of its malaria vaccine candidate in African infants. GSK has indicated that it intends to proceed into late stage trials of what could be the first malaria vaccine for infants and young children in Africa.

*Elan.* In 2005, Elan initiated clinical testing of its modified Alzheimer's disease product candidate containing QS-21. In 2007, Elan initiated Phase 2 studies of the modified Alzheimer's disease product candidate that contains QS-21, and we received a \$1.0 million milestone payment from Elan based on this advancement.

*Acambis.* In January 2008, Acambis, who at the time held an option to license QS-21 for use in influenza, released results from a Phase 1 study of its ACAM-FLU-A<sup>TM</sup> vaccine, which contains QS-21. The randomized, double-blind, placebo-controlled trial involving 79 subjects consisted of four arms: ACAM-FLU-A alone, ACAM-FLU-A plus aluminum hydroxide adjuvant, ACAM-FLU-A plus QS-21 adjuvant, and placebo. Overall, the trial results demonstrated that ACAM-FLU-A was well tolerated and capable of stimulating an immune response. Although immune responses were observed in all groups that received vaccine, the highest immune response was observed in the group vaccinated with ACAM-FLU-A plus QS-21, in which 90 percent of subjects generated virus-specific antibodies following immunization. Based on these results, Acambis exercised its option for a commercial license to QS-21 and made payments to us totaling \$200,000.

## **Table of Contents**

### ***Manufacturing***

Except in the case of GSK, we have retained worldwide manufacturing rights and have the right to subcontract manufacturing for QS-21. In March 2004, we entered into a supply agreement for the production of QS-21. The supplier is capable of producing up to 2 million doses per batch for investigational use at its facility. The initial term of this agreement has expired, and we are negotiating a new agreement with this supplier. In addition, under the terms of the letter with GSK, GSK is committed to supply certain quantities of QS-21 to us and our licensees in the future.

### **AG-707**

The first potential off-the-shelf application of our heat shock protein technology, AG-707, is an investigational therapeutic vaccine product candidate directed at the virus that causes genital herpes (herpes simplex virus-2 ( HSV-2 )). AG-707 is a multivalent vaccine containing multiple synthetic HSV-2 peptides. Based on the results of completed toxicology studies and other preclinical activities, we submitted to the FDA an IND for AG-707 during the second quarter of 2005.

*Background.* The U.S. Centers for Disease Control and Prevention estimated in surveys from 1997 that about one in five people in the United States ages 12 or older is infected with HSV-2. The World Health Organization estimated in 1995 that approximately 21 million people worldwide are infected each year. Genital herpes is currently treated with palliative topical drugs or antiviral agents that reduce further replication of the virus during the period of treatment.

*Clinical Trials.* In October 2005, we initiated a multicenter Phase 1 clinical trial of AG-707. We have completed enrollment in the first two dose levels in this study and are currently evaluating immune responses in those patients. If we elect to proceed, the full study will evaluate the safety profile and immune response of patients to AG-707 with and without our QS-21 proprietary adjuvant at three dose levels compared with placebo or adjuvant alone.

### ***Manufacturing***

The synthetic peptide components used in AG-707 are manufactured for us by a contract manufacturer. A contract manufacturer also produced the recombinant human Hsc70 used in AG-707. We plan to continue using contract manufacturers to produce the recombinant human Hsc70 and the synthetic peptides for AG-707. The purification of recombinant human Hsc70, complexing with synthetic peptides, fill and finish operations are performed in our Lexington, Massachusetts facility.

### **Aroplatin**

Aroplatin is a novel liposomal formulation of a third-generation platinum chemotherapeutic structurally similar to Eloxatin (oxaliplatin; Sanofi Aventis), a treatment for colorectal cancer. Although structural similarity does not guarantee similar clinical benefit, laboratory studies comparing Aroplatin to oxaliplatin showed that Aroplatin suppressed tumor growth, caused a reduction in tumor size, and provided a 50% increase in survival as compared to control animals. This data represents a five-fold improvement to results seen from the oxaliplatin arm of the study. Laboratory studies also indicate that Aroplatin has considerable anti-tumor activity, which is the ability to kill cancer cells. This anti-tumor activity has been demonstrated in over 10 tumor cell lines with results that are at least three-fold, or better, than those of cisplatin and/or carboplatin, two other approved platinum chemotherapeutic agents.

Platinum chemotherapeutics are cancer drugs containing the metallic element platinum, which has been shown to have some anti-cancer effects. Platinum chemotherapeutics have shown the ability to shrink solid tumors, and often in combination with non-platinum anti-cancer agents, have demonstrated moderate ability to



## **Table of Contents**

slow the spread of several types of solid tumor cancers. Published results that demonstrate activity of Aroplatin against tumors cells resistant to cisplatin and carboplatin suggest that Aroplatin may be useful in cancers that are already resistant to platinum agents. Aroplatin is also formulated in liposomes, a round shell of phospholipids, which are basic components of human cell membranes. Liposome formulation has been shown to increase drug bioavailability, or the amount of time and specific distribution within the body, which can extend the treatment effect. In some cases, liposomal drugs have been shown to accumulate at the site of a tumor, delivering higher concentrations of the drug to a disease target. The liposomal delivery system can also help to reduce the damaging effects of some drugs on healthy tissues.

Clinical data collected to date with Aroplatin indicates that it has a safety profile similar to that of a chemotherapeutic agent; the most common side effect being suppression of formation of new red or white blood cells and platelets in the bone marrow. Thus, based on its chemical structure, which makes it active against platinal resistant tumors, and its liposomal formulation, we believe that Aroplatin will have some advantages for the treatment of certain cancers when compared with current platinum-based chemotherapeutics such as oxaliplatin, carboplatin, and cisplatin. We have developed a new formulation of Aroplatin to enhance its pharmacological (action of the drug) activity.

### ***Clinical Trials***

In 2002, we initiated a Phase 2 trial with Aroplatin for advanced colorectal cancer unresponsive to medical treatment. This single-arm, open-label trial, conducted at the Arizona Cancer Center, was designed to evaluate the effect of Aroplatin alone in patients whose disease is not responsive to standard first-line cancer treatments (5-fluorouracil/leucovorin or capecitabine and irinotecan). In September 2003, the investigators presented findings from this trial at the European Cancer Conference, also known as ECCO. One out of the 15 evaluable patients demonstrated a partial clinical response and two experienced disease stabilization. Researchers observed that Aroplatin appeared well tolerated in this pretreated patient population. Because this was a single-arm study without a comparator arm, statistical significance is not calculable. This trial is closed to enrollment.

In January 2003, we also initiated at the John Wayne Cancer Center, in Santa Monica, California, a Phase 1/2 trial of Aroplatin for a variety of advanced solid tumors amenable to platinum therapy. The final study data demonstrated that out of the 15 evaluable patients, 14 were reported with disease progression at the first evaluation for disease status after the first treatment with Aroplatin, and one patient demonstrated stabilization of disease with subsequent disease progression after two months. The median time to progression was 66 days with a minimum of 49 days and a maximum of 105 days. This study is complete, and the data have undergone final review and analysis.

In October 2005, we initiated a Phase 1, dose-escalation trial of Aroplatin in solid malignancies and NHL. This study is currently enrolling patients. We hope to reach the maximum tolerated dose in this study in 2008.

### ***Manufacturing***

Aroplatin is manufactured for us by contract manufacturers. These contract manufacturers also produce drug products for other pharmaceutical companies at clinical and commercial scale and are periodically inspected by appropriate regulatory agencies.

### ***Preclinical Activities***

We are investigating different approaches for increasing Oncophage vaccine yield from patient tumor and potentially allowing manufacture of vaccine from smaller tumors, as well as evaluating the significance of structure of the principle component of Oncophage for biological activity. In preparation for potential future clinical trials, we have been developing methods that will assess the intensity of immunological responses following vaccination with Oncophage. These investigations should continue during 2008.

## Table of Contents

We continued the preclinical program initiated during 2006 to evaluate Aroplatin in combination with other chemotherapeutic products in multiple tumor models and preliminary results demonstrated an improvement in tumor response and survival for certain regimens. During 2007, we synthesized and tested a new Aroplatin-derived entity. Biological testing of this agent will continue in 2008. We also intend to continue method development in 2008 to support the manufacture of Aroplatin.

Our AG-707 program continued to enroll patients during 2007 and we are currently performing immunological testing following administration of this investigational vaccine. We expect this patient assessment will be completed during 2008. In preclinical experiments, we have been investigating the mechanism of action of this product, specifically determining the role of different populations of immune cells that are stimulated by AG-707. If the results of the patient assessment are positive, we may decide to continue enrollment in the AG-707 trial at the third and final dose level.

## Intellectual Property Portfolio

We devote significant resources to protecting and expanding our intellectual property portfolio. We seek to protect our core technologies through a combination of patents, trade secrets and know-how. We currently have exclusive rights to 79 issued United States patents and 86 foreign patents. We also have rights to 20 pending United States patent applications and 107 pending foreign patent applications. Our issued patents cover our core technologies including (i) HSPs such as Oncophage and AG-858 for treatment of cancers; (ii) HSPs such as AG-702/707 for treatment of infections; (iii) HSPs for treatment of autoimmune disorders; (iv) saponin adjuvants such as QS-21; and (v) liposomal drugs, including Aroplatin. In addition, several patent applications are related to technology based on HSP receptors. The following tables provide detailed information regarding the United States patents and patent applications relating to our product candidates and technologies and their uses. The tables encompass less than all of our 165 issued patents and 127 pending patent applications, because a substantial portion of our patent portfolio is directed to alternative and/or non-core technologies.

| Products or Technologies                      | Oncophage<br>&<br>AG-858 |      |      |      | HSPs in<br>Autoimmune<br>Disorders |  | HSP<br>Receptors |
|-----------------------------------------------|--------------------------|------|------|------|------------------------------------|--|------------------|
|                                               | 13                       | 10   | 1    | 3    |                                    |  |                  |
| Number of issued U.S. patents                 | 13                       | 10   | 1    | 3    |                                    |  |                  |
| Expiration range                              | 2014                     | 2022 | 2014 | 2022 | 2017                               |  | 2022             |
| Number of pending U.S. patent applications    | 3                        | 1    |      | 1    |                                    |  |                  |
| Number of issued foreign patents              | 19                       | 1    |      |      |                                    |  |                  |
| Expiration range                              | 2015                     | 2016 | 2015 | 2016 |                                    |  |                  |
| Number of pending foreign patent applications | 21                       | 6    |      |      |                                    |  |                  |

We also have rights to 28 issued U.S. patents and six U.S. patent applications, four issued foreign patents and 41 foreign patent applications directed to various other HSP technologies. With the exception of five patent applications that we own outright, all of our patent applications relating to Oncophage, AG-858, and AG-702/707 are licensed exclusively to us.

| Products or Technologies                      | QS-21 |      | Aroplatin |      |
|-----------------------------------------------|-------|------|-----------|------|
|                                               | 5     | 4    |           |      |
| Number of issued U.S. patents                 | 5     | 4    |           |      |
| Expiration range                              | 2008  | 2019 | 2010      | 2023 |
| Number of pending U.S. patent applications    |       |      |           | 5    |
| Number of issued foreign patents              | 51    | 2    |           |      |
| Expiration range                              | 2008  | 2019 | 2006      | 2011 |
| Number of pending foreign patent applications | 8     | 11   |           |      |

Patents expiring in 2008 relate to purified QS-21 and its use in enhancing an immune response to antigens. Although, the remaining patent life for our QS-21 proprietary adjuvant is limited, our license and supply agreements for QS-21 would typically provide royalties for at least 10 years after commercial launch. However, there is no guarantee that we will be able to collect royalties in the future.

## **Table of Contents**

All patents and applications relating to QS-21 are owned by Antigenics. All of the U.S. and foreign patents relating to Aroplatin are licensed exclusively to us. We own our U.S. and foreign patent applications relating to Aroplatin.

It is worth noting that:

patent applications in the United States are currently maintained in secrecy until they are published, generally 18 months after they are first filed;

patent applications in other countries, likewise, generally are not published until 18 months after they are first filed in those countries;

publication of technological developments in the scientific or patent literature often lags behind the date of these developments; and

searches of prior art may not reveal all relevant prior inventions.

In addition to our patents, we rely on our trade secrets and know-how to provide a competitive advantage, and we intend to continue to develop and protect this proprietary information. We take active measures to control access to know-how and trade secrets through confidentiality agreements, which we generally require all of our employees, consultants, and scientific collaborators to execute upon the commencement of an employment or consulting relationship with us. These agreements generally provide that all confidential information developed or made known to the individual by us during the course of the individual's relationship with us is to be kept confidential and not disclosed to third parties except in specific circumstances. In the case of employees and consultants, the agreements generally provide that all inventions conceived by the individual in the course of rendering services to us are assigned to us and become our exclusive property.

With the exception of five patent applications that we own outright, all of our heat shock protein patents and patent applications directed to Oncophage, AG-858, and AG-702/707 have been exclusively licensed to us by the following academic institutions:

### ***Mount Sinai School of Medicine***

In November 1994, we entered into a patent license agreement with the Mount Sinai School of Medicine. Through the Mount Sinai agreement, we obtained an exclusive worldwide license to patent rights relating to the heat shock protein technology that resulted from the research and development performed by Dr. Pramod Srivastava, our founding scientist and a former member of our Board of Directors. We agreed to pay Mount Sinai a royalty on the net sales of products covered by the licensed patent rights and also provided Mount Sinai with a 0.45% equity interest in the Company (approximately 62,000 shares) valued at approximately \$90,000 at the time of issuance. The term of the Mount Sinai agreement ends when the last of the licensed patents expires (2018) or becomes no longer valid. If we fail to pay royalties that are due under the agreement, Mount Sinai may issue written notice to us. If we continue to fail to pay royalties after 60 days from receipt of the written notice, Mount Sinai can terminate the agreement. The Mount Sinai agreement requires us to use due diligence to make the products covered by the licensed patent rights commercially available, including a requirement for us to use best efforts to reach a number of developmental milestones, which have been achieved. If we fail to comply with the due diligence provisions of the agreement, Mount Sinai could take actions to convert our exclusive license to a non-exclusive license after six months written notice. The Mount Sinai Agreement does not contain any milestone payment provisions.

### ***Fordham University***

During 1995, Dr. Srivastava moved his research to Fordham University ( Fordham ). We entered into a sponsored research and technology license agreement with Fordham in March 1995 relating to the continued development of the heat shock protein technology and agreed to make payments to Fordham to sponsor

## **Table of Contents**

Dr. Srivastava's research. Through the Fordham agreement, we obtained an exclusive, perpetual, worldwide license to all of the intellectual property, including all the patent rights, which resulted from the research and development performed by Dr. Srivastava at Fordham. We also agreed to pay Fordham a royalty on the net sales of products covered by the Fordham agreement through the last expiration date on the patents under the agreement (2018) or when the patents become no longer valid. The agreement does not contain any milestone payment provisions or any diligence provisions. Dr. Srivastava moved his research to the University of Connecticut Health Center during 1997 and, accordingly, the parts of the agreement related to payments for sponsored research at Fordham terminated in mid-1997. During the term of this agreement, we paid Fordham approximately \$2.4 million.

### ***University of Connecticut***

#### ***Research Agreement***

In February 1998, we entered into a research agreement with the University of Connecticut Health Center ( UConn ) and Dr. Srivastava, relating to the continued development of heat shock protein technology. Effective December 31, 2006, this agreement was terminated, and a termination fee of \$250,000 was paid to UConn in January 2007. The termination of this agreement did not affect our existing license rights under the license agreement discussed below.

#### ***License Agreement***

In May 2001, we entered into a license agreement with UConn. Through the license agreement, we obtained an exclusive worldwide license to patent rights resulting from inventions discovered under the research agreement. The term of the license agreement ends when the last of the licensed patents expires (2019) or becomes no longer valid. UConn may terminate the agreement: (1) if, after 30 days written notice for breach, we continue to fail to make any payments due under the license agreement, or (2) we cease to carry on our business related to the patent rights or if we initiate or conduct actions in order to declare bankruptcy. We may terminate the agreement upon 90 days written notice. The license agreement contains aggregate milestone payments of approximately \$1.2 million for each product we develop covered by the licensed patent rights. These milestone payments are contingent upon regulatory filings, regulatory approvals, and commercial sales of products. We have also agreed to pay UConn a royalty on the net sales of products covered by the license agreement as well as annual license maintenance fees beginning in May 2006. Royalties otherwise due on the net sales of products covered by the license agreement may be credited against the annual license maintenance fee obligations. As of December 31, 2007, we have paid approximately \$110,000 to UConn under the license agreement. The license agreement gives us complete discretion over the commercialization of products covered by the licensed patent rights but also requires us to use commercially reasonable diligent efforts to introduce commercial products within and outside the United States. If we fail to meet these diligence requirements, UConn may be able to terminate the license agreement.

#### ***Amendment Agreement***

In March 2003, we entered into an amendment agreement that amended certain provisions of both the research agreement and the license agreement. The amendment agreement granted us a license to additional patent rights. In consideration for execution of the amendment agreement, we agreed to pay UConn an up front payment and to make future payments for each patent or patent application with respect to which we exercised our option under the research agreement. As of December 31, 2007, we have paid approximately \$100,000 to UConn under the license agreement, as amended.

## **Table of Contents**

With the exception of sixteen patent applications that we own outright, all of our Aroplatin patents have been exclusively licensed to us by the following corporation and institution:

### ***Sumitomo Pharmaceuticals Co., Ltd.***

In December 2000, Aronex Pharmaceuticals, Inc., a company we acquired in July 2001, entered into a license agreement with Sumitomo Pharmaceuticals Co., Ltd. ( Sumitomo ). In September 2003, this agreement was amended and restated with Antigenics. The license agreement grants us the exclusive right to an issued U.S. patent application that contains certain claims that relate to Aroplatin. Except for the treatment of hepatoma, the license agreement gives us the exclusive right to make, use, develop, import, and sell Aroplatin in the United States. The term of the license agreement ends when the licensed patent expires in 2020. Either party may terminate the license agreement by giving written notice to the other party upon the occurrence of the following events: (1) if the other party makes an assignment for the benefit of creditors, is the subject of bankruptcy proceedings, or has a trustee or receiver appointed for substantially all of its assets, (2) if the other party becomes insolvent, or (3) if the other party materially defaults in its performance under the license agreement. Prior to our acquisition of Aronex Pharmaceuticals, Inc., Sumitomo received a \$500,000 up-front payment in 2001 from Aronex Pharmaceuticals, Inc. and will receive subsequent milestone payments from us in the aggregate of up to \$3.5 million if regulatory filings, regulatory approval and sales in connection with Aroplatin occur. We agreed to pay Sumitomo royalties on the net sales of Aroplatin in the United States upon commercialization of the product. The license agreement does not contain any diligence provisions.

### ***University of Texas Board of Regents/University of Texas M.D. Anderson Cancer Center***

In June 1988, a predecessor to Aronex Pharmaceuticals, Inc. entered into an exclusive license agreement with: (1) The Board of Regents of The University of Texas System, and (2) The University of Texas System Cancer Center, collectively referred to as the University of Texas. As amended, the exclusive license agreement grants us the exclusive, worldwide license to the University of Texas patent rights containing claims that relate to Aroplatin. The term of the exclusive license agreement expires when the last licensed patent expires, which is anticipated to be in 2015. Either party may terminate the agreement upon 60 days written notice if the other party materially breaches any material term of the exclusive license agreement. The agreement requires that we meet certain diligence provisions, specifically the conduct of ongoing and active research, developmental activities, marketing, clinical testing, or a licensing program, directed towards the production and sale of Aroplatin. If we fail to comply with these diligence provisions, the University of Texas may be able to terminate the exclusive license agreement upon 90 days written notice. The University of Texas also has the right to terminate the exclusive license agreement in the event that: (1) we discontinue our business, (2) we have a receiver or trustee appointed for our assets, or (3) we are the subject of a bankruptcy proceeding. We agreed to pay the University of Texas royalties on the net sales of Aroplatin. The applicable royalty percentage is dependent on the level of net sales of Aroplatin. We have also agreed to make a \$200,000 milestone payment to the University of Texas if the FDA approves a new drug application for Aroplatin. To date, we have not made any payments to the University of Texas under the license agreement.

## **Regulatory Compliance**

Governmental authorities in the United States and other countries extensively regulate the preclinical and clinical testing, manufacturing, labeling, storage, record keeping, advertising, promotion, export, marketing and distribution, among other things, of our investigational product candidates. In the United States, the FDA under the Federal Food, Drug, and Cosmetic Act, the Public Health Service Act and other federal statutes and regulations, subject pharmaceutical products to rigorous review.

In order to obtain approval of a new product from the FDA, we must, among other requirements, submit proof of safety and efficacy as well as detailed information on the manufacture and composition of the product. In most cases, this proof entails extensive preclinical, clinical, and laboratory tests. The FDA may also require

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## **Table of Contents**

confirmatory trials, post-marketing testing, and extra surveillance to monitor the effects of approved products, or place conditions on any approvals that could restrict the commercial applications of these products.

The first stage required for ultimate FDA approval of a new biologic or drug involves completion of preclinical studies and the submission of the results of these studies to the FDA. This, together with proposed clinical protocols, manufacturing information, analytical data, and other information in an IND, must become effective before human clinical trials may commence. Preclinical studies involve laboratory evaluation of product characteristics and animal studies to assess the efficacy and safety of the product. The FDA regulates preclinical studies under a series of regulations called the current Good Laboratory Practices, or GLP, regulations. If the sponsor violates these regulations, the FDA may invalidate the studies and require that the sponsor replicate those studies.

After the IND becomes effective, a sponsor may commence human clinical trials. The sponsor typically conducts human clinical trials in three sequential phases, but the phases may overlap. In Phase 1 trials, the sponsor tests the product in a small number of patients or healthy volunteers, primarily for safety at one or more doses. Phase 1 trials in cancer are often conducted with patients who have end-stage or metastatic cancer. In Phase 2, in addition to safety, the sponsor evaluates the efficacy of the product in a patient population somewhat larger than Phase 1 trials. Phase 3 trials typically involve additional testing for safety and clinical efficacy in an expanded population at geographically dispersed test sites. The sponsor must submit to the FDA a clinical plan, or protocol, accompanied by the approval of the institutions participating in the trials, prior to commencement of each clinical trial. The FDA may order the temporary or permanent discontinuation of a clinical trial at any time. In the case of product candidates for cancer, the initial human testing may be done in patients with the disease rather than in healthy volunteers. Because these patients are already afflicted with the target disease, such studies may provide results traditionally obtained in Phase 2 studies. Accordingly, these studies are often referred to as Phase 1/2 studies. Even if patients participate in initial human testing and a Phase 1/2 study is carried out, the sponsor is still responsible for obtaining all the data usually obtained in both Phase 1 and Phase 2 studies.

The sponsor must submit to the FDA the results of the preclinical and clinical testing, together with, among other things, detailed information on the manufacture and composition of the product, in the form of a new drug application or, in the case of a biologic, like Oncophage, a BLA. In a process that can take a year or more, the FDA reviews this application and, when and if it decides that adequate data is available to show that the new compound is both safe and effective for a particular indication and that other applicable requirements have been met, approves the drug or biologic for marketing. The amount of time taken for this approval process is a function of a number of variables, including the quality of the submission and studies presented and the potential contribution that the compound will make in improving the treatment of the disease in question.

The Food and Drug Administration Modernization Act established a statutory program for the approval of Fast Track products, including biologics. A Fast Track product is defined as a new drug or biologic intended for the treatment of a serious or life-threatening condition that demonstrates the potential to address unmet medical needs for this condition. Our most advanced product candidate, Oncophage, has been designated by the FDA as a Fast Track product in renal cell carcinoma and metastatic melanoma. We cannot predict whether these designations will impact the timing or likelihood of FDA approval of Oncophage.

The Orphan Drug Program provides a mechanism for the FDA to acknowledge that a product is designed to treat a disease with limited prevalence in the United States. An orphan drug designation bestows certain advantages including extending marketing exclusivity if the product is ultimately approved for marketing, considerations in trial size and design based on the actual patient population, and tax credits for some research and development expenses. We hold orphan drug designations for Oncophage in renal cell carcinoma and in metastatic melanoma.

## **Table of Contents**

The FDA may, during its review of a new drug application or biologics license application, ask for additional test data. If the FDA does ultimately approve a product, it may require post-marketing testing, including potentially expensive Phase 4 studies, and extra surveillance to monitor the safety and effectiveness of the drug. In addition, the FDA may in some circumstances impose restrictions on the use of the drug that may be difficult and expensive to administer, and may require prior approval of promotional materials.

Before approving a new drug application or a BLA, the FDA may inspect the facilities at which the product is manufactured and will not approve the product unless the manufacturing facilities appear to be in compliance with cGMP. In order to accomplish this inspection, a local field division of the FDA is responsible for completing this inspection and providing a recommendation for or against approval. We are in communication with the field division of the FDA regarding our manufacturing facilities. This effort is intended to assure appropriate facility and process design to avoid potentially lengthy delays in product approvals due to inspection deficiencies.

Similarly, before approving a new drug or marketing application, the FDA may also conduct pre-licensing inspections of the company, its contract research organizations and/or its clinical trial sites to ensure that clinical, safety, quality control, and other regulated activities are compliant with Good Clinical Practices, or GCP, or GLP, for specific non-clinical toxicology studies.

To assure such cGMP, GCP, and GLP compliance, the applicants must incur significant time, money, and effort in the area of training, record keeping, production, and quality control. Following approval, the manufacture, holding, and distribution of a product must continue to devote significant resources to maintain full compliance in these areas.

The labeling, advertising, promotion, marketing, and distribution of a drug or biologic product must be in compliance with FDA regulatory requirements. Failure to comply with applicable requirements can lead to the FDA demanding that production and shipment cease, and, in some cases, that the manufacturer recall products, or to enforcement actions that can include seizures, injunctions, and criminal prosecution. These failures can also lead to FDA withdrawal of approval to market a product.

Sales of pharmaceutical products outside the United States are subject to foreign regulatory requirements that vary widely from jurisdiction to jurisdiction. Additionally, if a product is manufactured in the United States, but not approved in the United States, certain FDA export regulations have to be satisfied to allow the product to be exported to the foreign country where the product is approved. Whether or not we have obtained FDA approval, we must generally obtain approval of a product by comparable regulatory authorities of international jurisdictions prior to the commencement of marketing the product in those jurisdictions. We are also subject to cGMP, GCP, and GLP compliance obligations, and are subject to inspection by international regulatory authorities. International requirements may in some circumstances be more rigorous than U.S. requirements and may require additional investment in manufacturing process development, non-clinical studies, clinical studies, and record keeping that are not required for U.S. regulatory compliance or approval. The time required to obtain this approval may be longer or shorter than that required for FDA approval and can also require significant resources in time, money, and labor.

We are also planning for compliance with the various federal and state laws pertaining to health care fraud and abuse, including anti-kickback laws and false claims laws. Anti-kickback laws make it illegal for a prescription drug manufacturer to solicit, offer, receive, or pay any remuneration in exchange for, or to induce, the referral of business, including the purchase or prescription of a particular drug. False claims laws prohibit anyone from knowingly and willingly presenting, or causing to be presented for payment to third-party payors, including Medicare and Medicaid, claims for reimbursed drugs or services that are false or fraudulent, claims for items or services not provided as claimed, or claims for medically unnecessary items or services.

Under the laws of the United States, the countries of the European Union, and other nations, we and the institutions where we sponsor research are subject to obligations to ensure the protection of personal information

## **Table of Contents**

of human subjects participating in our clinical trials. We have instituted procedures that we believe will enable us to comply with these requirements and the contractual requirements of our data sources. The laws and regulations in this area are evolving, and further regulation, if adopted, could affect the timing and the cost of future clinical development activities.

We are also subject to regulation under the Occupational Safety and Health Act, the Toxic Substances Control Act, the Resource Conservation and Recovery Act, and other current and potential future federal, state, or local regulations. Our research and development activities involve the controlled use of hazardous materials, chemicals, biological materials, various radioactive compounds, and for some experiments we use recombinant DNA. We believe that our procedures comply with the standards prescribed by local, state, and federal regulations; however, the risk of injury or accidental contamination cannot be completely eliminated. We conduct our research and manufacturing activities in voluntary compliance with the National Institutes of Health Guidelines for Recombinant DNA Research.

We are subject to the United States Foreign Corrupt Practices Act, which prohibits corporations and individuals from engaging in specified activities to obtain or retain business or to influence a person working in an official capacity. Under this act, it is illegal to pay, offer to pay, or authorize the payment of anything of value to any foreign government official, government staff member, political party, or political candidate in an attempt to obtain or retain business, or to otherwise influence a person working in an official capacity. Our present and future business has been and will continue to be subject to various other laws and regulations.

## **Competition**

Competition in the pharmaceutical and biotechnology industries is intense. Many pharmaceutical or biotechnology companies have products on the market and are actively engaged in the research and development of products for the treatment of cancer and infectious diseases. In addition, many competitors focus on immunotherapy as a treatment for cancer and infectious diseases. In particular, some of these companies are developing cancer vaccines produced from a patient's own cells or tissue. Others are focusing on developing heat shock protein products. Prior to regulatory approval, we may compete for access to patients with other products in clinical development, with products approved for use in the indications we are studying, or with off-label use of products in the indications we are studying. In addition, we compete for funding, access to licenses, personnel, and third-party collaborations. Many competitors have substantially greater financial, manufacturing, marketing, sales, distribution, and technical resources, and more experience in research and development, clinical trials, and regulatory matters, than we do. Competing companies developing or acquiring rights to more efficacious therapeutic products for the same diseases we are targeting, or which offer significantly lower costs of treatment, could render our products noncompetitive or obsolete.

Academic institutions, governmental agencies, and other public and private research institutions conduct significant amounts of research in biotechnology, medicinal chemistry, and pharmacology. These entities have become increasingly active in seeking patent protection and licensing revenues for their research results. They also compete with us in recruiting and retaining skilled scientific talent.

We are aware of certain programs and products under development by others that may compete with our programs and products. Several companies, including Accentia Biopharmaceuticals, Inc., Avax Technologies Inc., Oncothyreon Inc., Cell Genesys Inc., Dendreon Corporation, Geron Corporation, Medarex, Inc., Nventa Biopharmaceuticals Corporation, Oxford Biomedica PLC, LipoNova GmbH, Favril, Inc., Genitope Corporation, GlaxoSmithKline plc, Sanofi-Aventis Groupe, and Vaccinogen, Inc. are developing treatments for cancer based on modulation of the immune system, including cancer vaccines. In addition, several companies, including Pfizer Inc., Bristol Myers-Squibb Company, Genentech, Inc., Hoffman-LaRoche Inc., Merck & Co., Inc., Schering-Plough Corporation, AstraZeneca PLC, GlaxoSmithKline plc, Novartis AG and Wyeth, have expertise in, and are developing products for the treatment of cancer and infectious diseases.



## **Table of Contents**

Certain companies to which we have licensed QS-21 also license vaccine adjuvants from direct competitors, such as Intercell AG, Pfizer Inc., and Juvaris BioTherapeutics, Inc. The existence of products developed by these and other competitors, or other products of which we are not aware or which other companies may develop in the future, may adversely affect the marketability of products we develop.

## **Employees**

As of February 29, 2008, we had approximately 100 employees, of whom 10 were Ph.D.s and three were MDs. None of our employees are subject to a collective bargaining agreement. We believe that we have good relations with our employees.

## **Corporate History**

Antigenics L.L.C. was formed as a Delaware limited liability company in 1994 and was converted to Antigenics Inc., a Delaware corporation, in February 2000 in conjunction with our initial public offering of common stock.

## **Availability of Periodic SEC Reports**

Our Internet website address is [www.antigenics.com](http://www.antigenics.com). We make available free of charge through our website our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 ( "Securities Exchange Act" ) as soon as reasonably practicable after we electronically file such material with, or furnish such material to, the Securities and Exchange Commission ( "SEC" ). The contents of our website are not part of, or incorporated into, this document.

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

Our future operating results could differ materially from the results described in this Annual Report on Form 10-K due to the risks and uncertainties described below. We cannot assure investors that our assumptions and expectations will prove to have been correct. Important factors could cause our actual results to differ materially from those indicated or implied by forward-looking statements. See "Note Regarding Forward-Looking Statements" on page 2 of this Annual Report on Form 10-K. Factors that could cause or contribute to such differences include those factors discussed below.

## **Risks Related to our Business**

*If we incur operating losses for longer than we expect, or we are not able to raise additional capital, we may become insolvent and be unable to continue our operations.*

From our inception through December 31, 2007, we have generated net losses totaling \$498.6 million. Our net losses for the years ended December 31, 2007, 2006, and 2005 were \$36.8 million, \$51.9 million, and \$74.1 million, respectively. We expect to incur significant losses over the next several years as we continue our clinical trials, apply for regulatory approvals, continue development of our technologies, and pursue commercialization efforts and related activities. Furthermore, our ability to generate cash from operations is dependent on the success of our licensees and collaborative partners, as well as if and when we will be able to enter into new strategic licensing and partnering relationships and/or commercialize our product candidates. If we incur operating losses for longer than we expect, and/or we are unable to raise additional capital, we may become insolvent and be unable to continue our operations.

## **Table of Contents**

***If we fail to obtain the capital necessary to fund our operations, we will be unable to advance our development and commercialization programs and complete our clinical trials.***

On December 31, 2007, we had \$18.7 million in cash, cash equivalents, and short-term investments. In January 2008, we completed a private placement of shares of our common stock and warrants, raising net proceeds of \$25.8 million, after deducting offering costs of \$296,000. We believe, based on our current plans and activities, that our working capital resources at December 31, 2007, along with the proceeds from our private placement in January 2008, and the estimated proceeds from our license, supply, and collaborative agreements, will be sufficient to satisfy our liquidity requirements into 2009. However, we plan to attempt to raise additional funds prior to that time. For the year ended December 31, 2007, our average monthly cash used in operating activities was \$2.2 million. Capital expenditures for the year ended December 31, 2007 were insignificant, and we do not anticipate significant capital expenditures during 2008. Since our inception, we have financed our operations primarily through the sale of equity and convertible notes, interest income earned on cash, cash equivalents, and short-term investment balances, and debt provided through secured lines of credit. In order to finance future operations, we will be required to raise additional funds in the capital markets, through arrangements with collaborative partners, or from other sources. Additional financing, however, may not be available on favorable terms or at all. If we are unable to raise additional funds when we need them, we will be required to delay, reduce, or eliminate some or all of our development and commercialization programs and some or all of our clinical trials, including the development and commercialization programs and clinical trials supporting our most advanced product candidate, Oncophage. We also may be forced to license technologies to others under agreements that allocate to third parties substantial portions of the potential value of these technologies.

***We have significant long-term debt, and we may not be able to make interest or principal payments when due.***

As of December 31, 2007, our total long-term debt, excluding the current portion, was \$77.4 million. Our 5.25% convertible senior notes due 2025 do not restrict our ability or the ability of our subsidiaries to incur additional indebtedness, including debt that effectively ranks senior to the notes. On each of February 1, 2012, February 1, 2015 and February 1, 2020, holders may require us to purchase their notes for cash equal to 100% of the principal amount of the notes, plus any accrued and unpaid interest. Holders may also require us to repurchase their notes upon a fundamental change, as defined, at a repurchase price, in cash, equal to 100% of the principal amount of the notes to be repurchased, plus any accrued and unpaid interest, and in some cases, an additional make-whole premium.

Our 8% senior secured convertible notes (the 2006 Notes ) mature on August 30, 2011, at which point we may elect to repay the outstanding balance in cash or in common stock, subject to certain limitations. In no event will any of the noteholders be obligated to accept equity that would result in them owning in excess of 9.99% of our outstanding common stock at any given time in connection with any conversion, redemption, or repayment of these notes. The note agreements include material restrictions on our incurrence of debt and liens while these notes are outstanding, as well as other customary covenants.

Our ability to satisfy our obligations will depend upon our future performance, which is subject to many factors, including the factors identified in this Risk Factors section and other factors beyond our control. If we are not able to generate sufficient cash flow from operations in the future to service our indebtedness, we may be required, among other things:

to seek additional financing in the debt or equity markets;

to refinance or restructure all or a portion of our indebtedness;

to sell, out-license, or otherwise dispose of assets; and/or

to reduce or delay planned expenditures on research and development and/or commercialization activities.

## **Table of Contents**

Such measures might not be sufficient to enable us to make principal and interest payments. In addition, any such financing, refinancing, or sale of assets might not be available on economically favorable terms.

To date, we have had negative cash flows from operations. For the years ended December 31, 2007, 2006, and 2005, net cash used in operating activities was \$26.7 million, \$44.9 million, and \$66.3 million, respectively. Excluding our 2006 Notes, which mature in 2011 and for which we may elect to pay the interest in cash or additional notes, at our option, and for which the outstanding balance at maturity may be paid in cash or in common stock, subject to certain limitations, and assuming no additional interest-bearing debt is incurred and none of our notes are converted, redeemed, repurchased, or exchanged, our interest payments will be \$2.6 million annually during 2008 and thereafter until maturity.

***Because we expect additional Phase 3 clinical trials of Oncophage will be required prior to submitting a BLA for any indication, we likely will not commercialize Oncophage in the U.S. for several years, if ever. We may face similar hurdles in other territories where we seek marketing approval.***

The FDA has indicated that our Phase 3 clinical trials on Oncophage cannot, by themselves, support BLA filings in the studies' indications (renal cell carcinoma and metastatic melanoma). Any additional studies may take years to complete and may fail to support BLA filings for many reasons, including failure of the trials to demonstrate that Oncophage is safe and effective in the studies' indications, failure to conduct the studies in compliance with the clinical trial protocols, or the FDA's views at the time. We may face similar hurdles in other territories where we seek marketing approval.

***Several factors could delay or prevent the approval or successful commercialization of Oncophage in Russia or other jurisdictions we are currently exploring.***

On June 25, 2007, the Company completed the submission of an application for marketing authorization with the Russian Ministry of Public Health, which we call the Ministry, for the use of Oncophage in the treatment of kidney cancer patients at intermediate risk for disease recurrence. This was our first submission for product approval with a regulatory authority, and we may fail to obtain this approval. For example, our Phase 3 study in renal cell carcinoma may not be sufficient to support product approval in Russia or any other jurisdiction. Even if product approval is obtained in Russia, we will need to obtain export clearance from the FDA before we could export product from the U.S. for patient administration in Russia. If this clearance is not obtained, it is possible that the only remedy will be for us to manufacture product outside the U.S., and this would require additional time and resources. This could substantially delay our timelines for product launch, and, if we are unable to secure adequate financing to support this effort, we may not be able to make product available. In addition, if we are unable to secure successful local distribution arrangements and/or implement our own logistical processes for distribution of Oncophage, or if we are unable to identify sources of reimbursement and to obtain adequate reimbursement, including from national or regional funds, or to obtain adequate payment from individual patients, our commercialization efforts would be adversely affected. Furthermore, we may experience significant delays in the receipt of payment. We are also exploring potential opportunities to seek product approval in other jurisdictions, including Europe and Canada. However, the probability and timing of commercial launch in any jurisdiction or indication for this product candidate is uncertain.

***Analysis of subgroups in clinical trials is generally hypothesis-generating, supportive of future clinical trials, and not generally supportive, alone, of registration or approval of a product.***

The signals and trends observed in the Phase 3 renal cell carcinoma and melanoma trials of Oncophage are based on data analysis of subgroups of patients that were not pre-specified in these studies. While the subgroup data might be suggestive of treatment effect, the results cannot be expected, alone, to support registration or approval of Oncophage. While the data provide important evidence that is useful for physicians in designing and conducting future clinical trials, additional evidence may be required to recruit physicians for future clinical research.

## **Table of Contents**

### ***The drug development and approval process is uncertain, time-consuming, and expensive.***

The process of obtaining and maintaining regulatory approvals for new therapeutic products is lengthy, expensive, and uncertain. It also can vary substantially based on the type, complexity, and novelty of the product. We must provide regulatory authorities with preclinical and clinical data demonstrating that our product candidates are safe and effective before they can be approved for commercial sale. Clinical development, including preclinical testing, is also a long, expensive, and uncertain process. It may take us several years to complete our testing, and failure can occur at any stage of testing. Interim results of preclinical studies or clinical trials do not necessarily predict their final results, and acceptable results in early studies might not be seen in later studies. Any preclinical or clinical test may fail to produce results satisfactory to regulatory authorities. Preclinical and clinical data can be interpreted in different ways, which could delay, limit, or prevent regulatory approval. Negative or inconclusive results from a preclinical study or clinical trial, adverse medical events during a clinical trial, or safety issues resulting from products of the same class of drug could require a preclinical study or clinical trial to be repeated or cause a program to be terminated, even if other studies or trials relating to the program are successful.

Oncophage is a novel therapeutic cancer vaccine that is patient-specific, meaning it is derived from the patient's own tumor. Both the FDA and foreign regulatory agencies, including the European Medicines Agency, which is responsible for product approvals in Europe, Health Canada, which is responsible for product approvals in Canada, and the Ministry have relatively little experience in reviewing patient-specific oncology therapies. Oncophage may experience a long regulatory review process and high development costs, either of which could delay or prevent our commercialization efforts. We have also initiated communications with regulatory health authorities in other jurisdictions to discuss requirements for the approval of Oncophage in renal cell carcinoma. As of December 31, 2007, we have spent approximately 13 years and \$238.4 million on our research and development program in heat shock proteins for cancer.

To obtain regulatory approvals, we must, among other requirements, complete carefully controlled and well designed preclinical studies and clinical trials demonstrating that a particular product candidate is safe and effective for the applicable disease. Several biotechnology companies have failed to obtain regulatory approvals because regulatory agencies were not satisfied with the structure or conduct of the preclinical studies and clinical trials, or the ability to collect data or interpret the data from the trials. In addition, data from clinical trials are subject to varying interpretations and the data may not demonstrate the desired safety and efficacy. Similar problems could delay or prevent us from obtaining approvals.

We may not complete our planned preclinical studies or clinical trials on schedule or at all. We may not be able to confirm the safety and efficacy of our potential drugs in long-term clinical trials, which may result in further delays or failure to commercialize our product candidates. The timing and success of a clinical trial is dependent on enrolling sufficient patients in a timely manner, avoiding serious or significant adverse patient reactions, and demonstrating efficacy of the product candidate in order to support a favorable risk versus benefit profile, among other considerations. Because we rely on third-party clinical investigators and contract research organizations to conduct our clinical trials, we may encounter delays outside our control, particularly if our relationships with any third-party clinical investigators or contract research organizations are adversarial. The timing and success of our clinical trials, in particular, are also dependent on clinical sites and regulatory authorities accepting each trial's protocol, statistical analysis plan, product characterization tests, and clinical data. If we are unable to satisfy clinical sites or regulatory authorities with respect to such matters, including the specific matters noted above, or our clinical trials yield inconclusive or negative results, we will be required to modify or expand the scope of our clinical studies or conduct additional studies to support marketing approvals. In addition, regulatory authorities may request additional information or data that is not readily available. Delays in our ability to respond to such requests would delay, and failure to adequately address concerns would prevent, our commercialization efforts.

## **Table of Contents**

Also, we or regulatory authorities might further delay or halt our clinical trials for various reasons, including but not limited to:

we may fail to comply with extensive regulations;

a product candidate may not appear to be more effective than current therapies;

a product candidate may have unforeseen, undesirable, or significant adverse side effects, toxicities, or other characteristics;

we may fail to prospectively identify, or identify at all, the most appropriate patient populations and/or statistical analyses for inclusion in our clinical trials;

the time required to determine whether a product candidate is effective may be longer than expected;

we may be unable to adequately follow or evaluate patients after treatment with a product candidate;

patients may die during a clinical trial because their disease is too advanced or because they experience medical problems that may not be related to the product candidate;

sufficient numbers of patients may not meet our eligibility criteria and/or enroll in our clinical trials and may withdraw from our clinical trials after they have enrolled; or

we may be unable to produce sufficient quantities of a product candidate to complete the trial.

Furthermore, regulatory authorities, including the FDA and the Ministry, may have varying interpretations of our preclinical study and clinical trial data, which could delay, limit, or prevent regulatory approval or clearance. Any delays or difficulties in obtaining regulatory approvals or clearances for our product candidates may:

adversely affect the marketing of any products we or our collaborators develop;

impose significant additional costs on us or our collaborators;

diminish any competitive advantages that we or our collaborators may attain;

limit our ability to receive royalties and generate revenue and profits; and

adversely affect our business prospects and ability to obtain financing.

If we are delayed in these activities or do not receive regulatory approval for our product candidates in a timely manner, we may have to incur additional development expense, and subject to securing additional financing, we will not be able to commercialize them in the timeframe anticipated, and therefore our business will suffer.

***Even if we do receive regulatory approval for our product candidates, the FDA or international regulatory authorities will generally impose limitations on the indicated uses for which our products may be marketed, or subsequently withdraw approval, or may take other actions against us or our products adverse to our business.***

The FDA and international regulatory authorities generally approve products for particular indications. If an approval is for a limited indication, this limitation reduces the size of the potential market for that product. Product approvals, once granted, may be withdrawn if problems occur after initial marketing. Failure to comply with applicable FDA and other regulatory requirements can result in, among other things, warning letters, fines, injunctions, civil penalties, recall or seizure of products, total or partial suspension of production, refusal of the government to renew marketing applications, and/or criminal prosecution.

## **Table of Contents**

***Federal regulatory reforms may create additional burdens that would cause us to incur additional costs and may adversely affect our ability to commercialize our products.***

From time to time, legislation is drafted, introduced, and passed in Congress that could significantly change the statutory provisions governing the approval, manufacturing, and marketing of products regulated by the FDA. For example, on September 27, 2007, the Food and Drug Administration Amendments Act of 2007, the FDAAA, was enacted, giving the FDA enhanced post-marketing authority, including the authority to require post-market studies and clinical trials, labeling changes based on new safety information, and compliance with risk evaluation and mitigation strategies. Failure to comply with any requirements under the FDAAA may result in significant penalties. The FDAAA also authorizes significant civil money penalties for the dissemination of false or misleading direct-to-consumer advertisements and allows the FDA to require companies to submit direct-to-consumer television drug advertisements for FDA review prior to public dissemination. Additionally, the new law expands the clinical trial registry so that sponsors of all clinical trials, except for Phase I trials, are required to submit certain clinical trial information for inclusion in the clinical trial registry data bank. The FDA's exercise of its new authority could result in delays or increased costs during the period of product development, clinical trials and regulatory review and approval, increased costs to assure compliance with new post-approval regulatory requirements, and potential restrictions on the sale of approved products. In addition to the FDAAA, FDA regulations and guidance are often revised or reinterpreted by the agency in ways that may significantly affect our business and our products. It is impossible to predict whether further legislative changes will be enacted, or whether FDA regulations, guidance, or interpretations will change, and what the impact of such changes, if any, may be.

***Challenges in identifying sufficient numbers of patients that meet our eligibility criteria, enrolling patients in our studies, or retaining patients in our studies after they have enrolled, will slow or prevent completion of clinical trials.***

We have encountered in the past, and may encounter in the future, delays in initiating trial sites and in enrolling patients into our clinical trials. Future enrollment delays will postpone the dates by which we expect to complete the impacted trials and the potential receipt of regulatory approvals, and may result in increased cost. If we fail to enroll a sufficient number of patients in clinical trials, the trials may fail to demonstrate the efficacy of a product candidate at a statistically significant level. Enrollment difficulties may arise due to many factors, including the nature of our product candidates, the identification of patients meeting the inclusion criteria, the speed of clinical trial site review of our protocols and their success in enrollment, delay in contract negotiations with clinical trial sites, increased industry demand for trial patients, the advanced disease state of the patients, or a high dropout rate, among others. Patients may also die during a clinical trial if their disease is advanced or because they experience problems unrelated to the product candidate.

***If new data from our research and development activities continues to modify our strategy, then we expect to continually adjust our projections of timelines and costs of programs; this uncertainty may depress the market price of our stock and increase our expenses.***

Because we are focused on novel technologies, our research and development activities, including our preclinical studies and clinical trials, involve the ongoing discovery of new facts and the generation of new data, based on which we determine next steps for a relevant program. These developments are sometimes a daily occurrence and constitute the basis on which our business is conducted. We need to make determinations on an ongoing basis as to which of these facts or data will influence timelines and costs of programs. We may not always be able to make such judgments accurately, which may increase the costs we incur attempting to commercialize our product candidates. These issues are pronounced in our efforts to commercialize Oncophage, which represents an unprecedented approach to the treatment of cancer.

We may need to successfully address a number of technological challenges in order to complete development of our product candidates. Moreover, these product candidates may not be effective in treating any disease or may prove to have undesirable or unintended side effects, toxicities, or other characteristics that may preclude our obtaining regulatory approvals or prevent or limit commercial use.

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## **Table of Contents**

***Failure to enter into significant collaboration agreements may hinder our efforts to develop and commercialize our product candidates and will increase our need to rely on other financing mechanisms, such as sales of securities, to fund our operations.***

We have been engaged in efforts to enter into collaborative agreements with one or more pharmaceutical or larger biotechnology companies to assist us with development and/or commercialization of our product candidates.

While we have been pursuing these business development efforts for several years, we have not negotiated an agreement relating to the potential development or commercialization of Oncophage. Due to the announcement in March 2006 that part I of our Phase 3 trial in renal cell carcinoma did not achieve its primary endpoint, and because companies may be skeptical regarding the potential success of a patient-specific product candidate, many companies may be unwilling to commit to an agreement prior to receipt of additional clinical data, if at all. In the absence of such data, potential collaborative partners may demand economic terms that are unfavorable to us, or may be unwilling to collaborate with us at all. Even if Oncophage generates favorable clinical data over the next several years, we may not be able to negotiate a collaborative transaction at all, or negotiate one that provides us with favorable economic terms.

We plan on pursuing business development efforts to partner each of Aroplatin and AG-707. These products are at an early stage, and collaborative partners or licensees may defer discussions until results from early clinical trials become available, or they may not engage in such discussions at all.

We may not be able to negotiate agreements with economic terms similar to those negotiated by other companies. We may not, for example, obtain significant up-front payments or substantial royalty rates. If we fail to enter into collaboration agreements, our efforts to develop and/or commercialize Oncophage, Aroplatin, or AG-707 may be undermined. In addition, if we do not raise funds through collaboration agreements, we will need to rely on other financing mechanisms, such as sales of securities, to fund our operations. Sales of certain securities may substantially dilute the ownership of existing stockholders.

***Because we rely on collaborators and licensees for the development and commercialization of some of our product candidate programs, these programs may not prove successful, and/or we may not receive significant payments from such parties, due to unsuccessful results or abandonment of these programs, failure to enter into future collaborations or license agreements, or the inability to manufacture product supply requirements for our collaborators and licensees.***

Part of our strategy is to develop and commercialize some of our product candidates by continuing our existing arrangements with academic and corporate collaborators and licensees and by entering into new collaborations. Our success depends on our ability to negotiate such agreements and on the success of the other parties in performing research, preclinical and clinical testing, completing regulatory applications, and commercializing product candidates. For example, the development of Oncophage for the treatment of glioma is currently dependent in part on the efforts of our institutional collaborators, such as the Brain Tumor Research Center at the University of California, San Francisco, which has recently initiated a Phase 2 clinical trial of Oncophage for the treatment of recurrent glioma. In addition, several product candidates containing QS-21 depend on the success of our collaborative partners or licensees, and the Company's relationships with these third parties. Such product candidates depend on our collaborators and licensees successfully enrolling patients and completing clinical trials, being committed to dedicating the resources to advance these product candidates, obtaining regulatory approvals, and successfully commercializing product candidates.

These development activities may fail to produce marketable products. For example, in August 2006, Pharmexa A/S announced a decision to cease dosing patients in their Phase 2 clinical trial of their HER-2 Protein AutoVac breast cancer vaccine containing our QS-21 adjuvant, after it was determined that the trial was unlikely to meet its primary endpoint. Several of our agreements also require us to transfer important rights and



## **Table of Contents**

regulatory compliance responsibilities to our collaborators and licensees. As a result of collaborative agreements, we will not control the nature, timing, or cost of bringing these product candidates to market. Our collaborators and licensees could choose not to devote resources to these arrangements or, under certain circumstances, may terminate these arrangements early. They may cease pursuing product candidates or elect to collaborate with different companies. In addition, these collaborators and licensees, outside of their arrangements with us, may develop technologies or products that are competitive with those that we are developing. From time to time, we may also become involved in disputes with our collaborators. Such disputes could result in the incurrence of significant expense. As a result of these factors, our strategic collaborations may not yield revenue. Furthermore, we may be unable to enter into new collaborations or enter into new collaborations on favorable terms. Failure to generate significant revenue from collaborations would increase our need to fund our operations through sales of securities and could limit financial resources available for investment in manufacturing capacity expansion.

***If we are unable to purify heat shock proteins from some cancer types, we may have difficulty successfully initiating clinical trials in new indications or completing our clinical trials, and, even if we do successfully complete our clinical trials, the size of our potential market could decrease.***

Our ability to successfully develop and commercialize Oncophage for a particular cancer type depends on our ability to purify heat shock proteins from that type of cancer. If we experience difficulties in purifying heat shock proteins for a sufficiently large number of patients in our clinical trials, it may lower the probability of a successful analysis of the data from these trials and, ultimately, the ability to obtain regulatory approvals. For example, our inability to manufacture adequate amounts of Oncophage for approximately 30% of the patients randomized in the Oncophage treatment arm of the metastatic melanoma trial undermined the potential for the trial to meet its pre-specified clinical endpoints. To address this lower success rate for melanoma, we included additional protease inhibitors in the manufacturing process to further limit the breakdown of the product. Subsequent to the implementation of this change, we successfully produced Oncophage for 18 of 23 patients, a success rate of approximately 78%, whereas previously we had produced Oncophage for 123 of 179 patients, a success rate of approximately 69%. The small sample size used subsequent to our process change may make the reported improvement in our manufacturing success unreliable as a predictor of future success.

We have successfully manufactured product for 100%, 10 of 10, of the patients randomized to treatment in our Phase 2 lung cancer trial and 95%, 21 of 22, of the patients randomized to treatment in our Phase 2 metastatic renal cell carcinoma trial. Based on our clinical trials to date, we have been able to manufacture Oncophage from 87% of the tumors delivered to our manufacturing facility; for non-metastatic renal cell carcinoma, 92%; for melanoma, 70%; for colorectal cancer, 98%; for gastric cancer, 81%; for lymphoma, 89%; for glioma, 76%; and for pancreatic cancer, 46%. The low rate for pancreatic cancer is due to the abundance of proteases in pancreatic tissue. Proteases are enzymes that break down proteins. These proteases may degrade the heat shock proteins during the purification process. We have made process development advances that have improved the manufacture of Oncophage from pancreatic tissue. In an expanded Phase 1 pancreatic cancer study, Oncophage was manufactured from five of five tumor samples (100%), bringing the aggregate success rate for this cancer type, which was previously 30%, to 46%.

We may encounter problems with other types of cancer as we expand our research. If we cannot overcome these problems, the number of cancer types that our heat shock protein product candidates could treat would be limited. In addition, if we commercialize our heat shock protein product candidates, we may not be able to replicate past manufacturing success rates and we may face claims from patients for whom we are unable to produce a vaccine.

***Manufacturing problems may cause product launch delays and unanticipated costs.***

If one of our product candidates or our licensees' product candidates for which we maintain exclusive or primary manufacturing rights for a component nears marketing approval or is approved for sale, we expect we would be required to manufacture substantially more than we have been required to manufacture for preclinical

## **Table of Contents**

studies and clinical trials. We have no experience manufacturing products in commercial quantities, and we can provide no assurance that we will be able to do so successfully. We may experience higher manufacturing failure rates than we have in the past if and when we attempt to substantially increase production volume.

Currently, we manufacture Oncophage and AG-707 in our own manufacturing facility. Because Oncophage is a patient-specific biologic, it requires product characterization steps that are more onerous than those required for most chemical pharmaceuticals. Accordingly, we employ multiple steps to attempt to control the manufacturing processes. Minor deviations in these manufacturing processes could result in unacceptable changes in the vaccine and result in production failures. AG-707 is also a complex product requiring Good Manufacturing Practices, or GMP, for the manufacture and release of a recombinant protein and a large number of peptides. In order to prepare additional AG-707 to support future clinical trials, we will have to manufacture or have manufactured these critical raw materials. If we choose to manufacture QS-21 and Aroplatin in our own manufacturing facility, the investment of substantial funds and the recruitment of qualified personnel would be required in order to build or lease and operate new manufacturing facilities. In order to continue to support QS-21 product candidates and Aroplatin development, apply for regulatory approvals, and commercialize these product candidates, we or our licensees or collaborators will need to develop, contract for, or otherwise arrange for the necessary manufacturing capabilities. There is no assurance that we or our licensees or collaborators will be successful in these endeavors.

We currently rely upon and expect to continue to rely upon third parties, potentially including our collaborators or licensees, to produce materials required for product candidates, preclinical studies, clinical trials, and commercialization. A number of factors could cause production interruptions at our manufacturing facility or our contract manufacturers, including equipment malfunctions, labor or employment retention problems, natural disasters, power outages, terrorist activities, or disruptions in the operations of our suppliers. Alternatively, there is the possibility we may have excess manufacturing capacity if product candidates do not progress as planned.

There are a limited number of contract manufacturers that operate under the FDA's GMP regulations that are capable of manufacturing our product candidates. If we are unable to do so ourselves or arrange for third-party manufacturing of these product candidates, or to do so on commercially reasonable terms, we may not be able to complete development of these product candidates or commercialize them ourselves or through our collaborative partners or licensees. Reliance on third-party manufacturers entails risks to which we would not be subject if we manufactured products ourselves, including reliance on the third party for regulatory compliance, the possibility of breach of the manufacturing agreement by the third party because of factors beyond our control, and the possibility of termination or non-renewal of the agreement by the third party, based on its own business priorities, at a time that is costly or inconvenient for us.

Manufacturing is also subject to extensive government regulation. Regulatory authorities must approve the facilities in which human health care products are produced. In addition, facilities are subject to ongoing inspections and minor changes in manufacturing processes may require additional regulatory approvals, either of which could cause us to incur significant additional costs and lose revenue.

***If we fail to sustain and further build our intellectual property rights, competitors will be able to take advantage of our research and development efforts to develop competing products.***

If we are not able to protect our proprietary technology, trade secrets, and know-how, our competitors may use our inventions to develop competing products. We currently have exclusive rights to 79 issued U.S. patents and 86 foreign patents. We also have rights to 20 pending U.S. patent applications and 107 pending foreign patent applications. However, we may not have patent coverage in all territories where we may pursue regulatory approval. In addition, our patents may not protect us against our competitors. Our patent positions, and those of other pharmaceutical and biotechnology companies, are generally uncertain and involve complex legal, scientific, and factual questions. The standards which the United States Patent and Trademark Office uses to grant patents, and the standards which courts use to interpret patents, are not always applied predictably or

## **Table of Contents**

uniformly and can change, particularly as new technologies develop. Consequently, the level of protection, if any, that will be provided by our patents if we attempt to enforce them, and they are challenged, is uncertain. In addition, the type and extent of patent claims that will be issued to us in the future is uncertain. Any patents that are issued may not contain claims that permit us to stop competitors from using similar technology.

In addition to our patented technology, we also rely on unpatented technology, trade secrets, and confidential information. We may not be able to effectively protect our rights to this technology or information. Other parties may independently develop substantially equivalent information and techniques or otherwise gain access to or disclose our technology. We generally require each of our employees, consultants, collaborators, and certain contractors to execute a confidentiality agreement at the commencement of an employment, consulting, collaborative, or contractual relationship with us. However, these agreements may not provide effective protection of our technology or information, or in the event of unauthorized use or disclosure, they may not provide adequate remedies.

***We may incur substantial costs as a result of litigation or other proceedings relating to patent and other intellectual property rights, and we may be unable to protect our rights to, or use, our technology.***

If we choose to go to court to stop someone else from using the inventions claimed in our patents, that individual or company has the right to ask a court to rule that our patents are invalid and should not be enforced against that third party. These lawsuits are expensive and would consume time and other resources even if we were successful in stopping the infringement of our patents. In addition, there is a risk that the court will decide that our patents are not valid and that we do not have the right to stop the other party from using the claimed inventions. There is also the risk that, even if the validity of our patents is upheld, the court will refuse to stop the other party on the grounds that such other party's activities do not infringe our patents.

We may not have rights under some patents or patent applications related to some of our existing and proposed products or processes. Third parties may own or control these patents and patent applications in the United States and abroad. Therefore, in some cases, such as those described below, in order to develop, use, manufacture, sell, or import some of our existing or proposed products, or develop or use some of our existing or proposed processes, we or our collaborators may choose to seek, or be required to seek, licenses under third-party patents issued in the United States and abroad, or those that might issue from United States and foreign patent applications. In such an event, we likely would be required to pay license fees or royalties or both to the licensor. If licenses are not available to us on acceptable terms, we or our collaborators may not be able to exploit these products or processes.

Furthermore, a third party may claim that we are using inventions covered by such third-party's patents or other intellectual property rights and may go to court to stop us from engaging in our normal operations and activities. These lawsuits are expensive and would consume time and other resources. There is a risk that a court would decide that we are infringing the third-party's patents and would order us to stop the activities covered by the patents. In addition, there is a risk that a court will order us to pay the other party substantial damages for having violated the other party's patents. The biotechnology industry has produced a proliferation of patents, and it is not always clear to industry participants, including us, which patents cover various types of products. The coverage of patents is subject to interpretation by the courts, and the interpretation is not always uniform. We know of patents issued to third parties relating to heat shock proteins and alleviation of symptoms of cancer. We have reviewed these patents, and we believe, as to each claim in those patents, that we either do not infringe the claim, or that the claim is invalid. Moreover, patent holders sometimes send communications to a number of companies in related fields suggesting possible infringement, and we, like a number of biotechnology companies, have received such communications, including with respect to the third-party patents mentioned above, as well as communications alleging infringement of a patent relating to certain gel-fiberglass structures. If we are sued for patent infringement, we would need to demonstrate that our products either do not infringe the patent claims of the relevant patent and/or that the patent claims are invalid, which we may not be able to do. Proving invalidity, in particular, is difficult, since it requires a showing of clear and convincing evidence to overcome the presumption of validity enjoyed by issued patents.

## **Table of Contents**

Two patent applications licensed to us contain claims that are substantially the same as claims in a third-party patent relating to heat shock proteins. At our request, the United States Patent and Trademark Office declared an interference with this third-party patent, U.S. Patent No. 6,713,608 which we believe is owned by the Science & Technology Corporation @ UNM (University of New Mexico). The patentee failed to participate in the interference proceedings and the United States Patent and Trademark Office cancelled all of the claims of U.S. Patent No. 6,713,608.

On October 12, 2005, a third party filed a notice of opposition in the European Patent Office to European patent EP 0750513 B1 which has claims relating to AG-702/707 and to which we hold the exclusive license. On January 21, 2008, the opposition division of the European Patent Office issued its decision revoking the patent. This decision may be appealed by March 21, 2008. For strategic reasons, we have decided not to appeal this decision.

***We may become involved in expensive patent litigation or other proceedings, which could result in our incurring substantial costs and expenses or substantial liability for damages, or require us to stop development and commercialization efforts.***

There has been substantial litigation and other proceedings regarding patent and other intellectual property rights in the pharmaceutical and biotechnology industries. We may become a party to patent litigation or other proceedings regarding intellectual property rights.

The cost to us of any patent litigation or other proceeding, even if resolved in our favor, could be substantial. Some of our competitors may be able to sustain the cost of such litigation or proceedings more effectively than we can because of their substantially greater financial resources. If a patent litigation or other proceeding is resolved against us, we or our collaborators may be enjoined from using, manufacturing, selling, or importing our products or processes without a license from the other party, and we may be held liable for significant damages. We may not be able to obtain any required licenses on commercially acceptable terms or at all.

Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could have a material adverse effect on our ability to enter into collaborations with other entities, obtain financing, or compete in the marketplace. Patent litigation and other proceedings may also absorb significant management time.

***Our patent protection for any compound or product that we seek to develop may be limited to a particular method of use or indication such that, if a third party were to obtain approval of the compound or product for use in another indication, we could be subject to competition arising from off-label use.***

Although we generally seek the broadest patent protection available for our proprietary compounds, we may not be able to obtain patent protection for the actual composition of matter of any particular compound and may be limited to protecting a new method of use for the compound or otherwise restricted in our ability to prevent others from exploiting the compound. If we are unable to obtain patent protection for the actual composition of matter of any compound that we seek to develop and commercialize and must rely on method of use patent coverage, we would likely be unable to prevent others from manufacturing or marketing that compound for any use that is not protected by our patent rights. If a third party were to receive marketing approval for the compound for another use, physicians might nevertheless prescribe it for indications that are not described in the product's labeling or approved by the FDA or other regulatory authorities. Even if we have patent protection of the prescribed indication, as a practical matter, we likely would have little recourse as a result of this off-label use. In that event, our revenues from the commercialization of the compound would likely be adversely affected.

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**Table of Contents**

***If we fail to comply with our obligations in our intellectual property licenses with third parties, we could lose license rights that are important to our business.***

We are a party to various license agreements under which we receive the right to practice and use important third-party patent rights. We may enter into additional licenses in the future. Our existing licenses impose, and we expect future licenses will impose, various diligence, milestone payment, royalty, insurance, and other obligations on us. If we fail to comply with these obligations, the licensor may have the right to terminate the license, in which event we might not be able to market any product that is covered by the licensed patents.

***If we fail to retain the services of, and/or maintain positive relations with, key individuals and our employees, we may be unable to successfully develop our product candidates, conduct clinical trials, and obtain financing.***

Garo H. Armen, Ph.D., the Chairman of our Board of Directors and our Chief Executive Officer, co-founded Antigenics in 1994 with Pramod K. Srivastava, Ph.D., and has been and continues to be integral to building our company and developing our technology. If Dr. Armen severed his relationship with Antigenics, our business may be adversely impacted.

Effective December 1, 2005, we entered into an employment agreement with Dr. Armen. Subject to the earlier termination as provided in the agreement, the agreement has an original term of one year and automatically extends thereafter for successive terms of one year each, unless either party provides notice to the other at least ninety days prior to the expiration of the original or any extension term. Dr. Armen plays an important role in our day-to-day activities. We do not carry key employee insurance policies for Dr. Armen or any other employee.

Dr. Srivastava currently has a consulting agreement with us pursuant to which he is retained to provide advice and services to Antigenics from time to time. This agreement has an initial term ending March 31, 2010. However, the parties are in discussions regarding potential early termination.

We also rely greatly on employing and retaining other highly trained and experienced senior management and scientific and operations personnel. The competition for these and other qualified personnel in the biotechnology field is intense. In order to reduce our expenses, we have restructured our business and reduced staffing levels. This has in many cases eliminated any redundancy in skills and capabilities in key areas. If we are not able to attract and retain qualified personnel, we may not be able to achieve our strategic and operational objectives.

***We may face litigation that could result in substantial damages and may divert management's time and attention from our business.***

Antigenics, our Chairman and Chief Executive Officer, Garo H. Armen, Ph.D., and two investment banking firms that served as underwriters in our initial public offering have been named as defendants in a federal civil class action lawsuit. The suit alleges that the brokerage arms of the investment banking firms charged secret excessive commissions to certain of their customers in return for allocations of our stock in the offering. The suit also alleges that shares of our stock were allocated to certain of the investment banking firms' customers based upon agreements by such customers to purchase additional shares of our stock in the secondary market. We submitted settlement papers with the Federal District Court for the Southern District of New York, which the court preliminarily approved in August 2005. The settlement remained subject to a number of conditions, including final court approval. In December 2006, the appellate court overturned the certification of classes in the six test cases that were selected by the underwriter defendants and plaintiffs in the coordinated proceedings. Class certification was one of the conditions of the settlement. Accordingly, on June 25, 2007, the court entered an order terminating the proposed settlement based on a stipulation among the parties to the settlement. It is uncertain whether there will be any revised or future settlement. To date, the plaintiffs have not asserted a specific amount of damages and, at this time, we cannot make a reliable estimate of possible loss, if any, related to this litigation. Regardless of the outcome, participation in this lawsuit diverts our management's time and attention from our business and may result in our paying damages.

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## **Table of Contents**

In addition, we are involved in other litigation and may become involved in additional litigation. Any such litigation could be expensive in terms of out-of-pocket costs and management time, and the outcome of any such litigation is uncertain.

Our directors and officers insurance policies provide \$25.0 million annual aggregate coverage and \$25.0 million per occurrence coverage. This limited insurance coverage may not be sufficient to cover us for future claims.

***If we fail to obtain adequate levels of reimbursement for our product candidates, the commercial potential of our product candidates will be significantly limited.***

In many of the markets where we or our collaborative partners would commercialize a product following regulatory approval, the prices of pharmaceutical products are subject to direct price controls by law and to drug reimbursement programs with varying price control mechanisms. Public and private health care payers control costs and influence drug pricing through a variety of mechanisms, including through negotiating discounts with the manufacturers and through the use of tiered formularies and other mechanisms that provide preferential access to certain drugs over others within a therapeutic class. Payers also set other criteria to govern the uses of a drug that will be deemed medically appropriate and therefore reimbursed or otherwise covered.

Sales of therapeutic and other pharmaceutical products are dependent in part on the availability of reimbursement to the physician or consumer from third-party payers, such as government or private insurance plans. Our profitability will depend on the extent to which government authorities, private health insurance providers, and other organizations provide reimbursement for the cost of our product candidates. Government and private third-party payers are increasingly challenging the prices charged for medical products and services, through class action litigation and otherwise, and increasingly attempt to limit and/or regulate the reimbursement for medical products. Many patients will not be capable of paying for our product candidates by themselves. Cost containment measures by third parties may prevent us from becoming profitable.

It is not clear that public and private insurance programs will determine that Oncophage or our other product candidates come within a category of items and services covered by their insurance plans. Generally, in Russia, Europe, and other countries outside the U.S., government sponsored health care systems pay a substantial share of health care costs and they may regulate reimbursement levels of our products to control costs. The reimbursement system in Russia is changing rapidly and has experienced serious funding and administrative problems for its national and regional reimbursement programs, such as the program known by the Russian acronym of DLO which was established in January 2005 to provide free-of-charge prescriptions to low-income Russians. This has resulted in substantially delayed payments and in fewer drugs being covered. In addition, the Russian government is attempting to reduce costs by various means, including attempting to reduce coverage for drugs produced outside of Russia, as they tend to cost more than drugs produced in Russia. Furthermore, it is possible that reimbursement for cancer drugs, and other therapeutic areas, will be covered by a newly created system. It is uncertain what level of reimbursement the Russian government may provide for cancer drugs in the future. Drug reimbursement in Russia could continue to undergo change. Therefore, even if we succeed in achieving marketing approval in Russia, reimbursement problems may prevent us from becoming profitable.

It is possible that there will be substantial delays in obtaining coverage of Oncophage or our other product candidates and that, if coverage is obtained, there may be significant restrictions on the circumstances in which there would be reimbursement. Where government or insurance coverage is available, there may be limits on the payment amount. Such limits could have a material adverse effect on sales of any of our product candidates that receive marketing approval. If we are unable to obtain or retain adequate levels of reimbursement from government or private health plans, our ability to sell Oncophage and our other potential products will be adversely affected.

Federal, state, and foreign governments continue to propose legislation designed to contain or reduce health care costs. Legislation and regulations affecting the pricing of our potential products may change further or be

## **Table of Contents**

adopted before Oncophage or any of our other potential products are approved for marketing. Cost control initiatives by governments or third-party payers could decrease the price that we receive for any one or all of our potential products or increase patient coinsurance to a level that makes Oncophage and our other potential products under development unaffordable. In addition, government and private health plans persistently challenge the price and cost-effectiveness of therapeutic products. Accordingly, these third parties may ultimately not consider Oncophage or any or all of our other potential products under development to be cost-effective, which could result in products not being covered under their health plans or covered only at a low price. Any of these initiatives or developments could prevent us from successfully marketing and selling any of our potential products. We are unable to predict what impact any future regulation or third-party payer initiatives relating to reimbursement for Oncophage or any of our other potential products, if any of them are approved for sale, will have on sales.

### ***Our sales, marketing, and commercial operations experience and resources are limited and need to be developed or acquired.***

We have very limited experience and resources in marketing and selling pharmaceutical products or in running commercial operations. In addition, for our patient-specific heat shock protein product candidates, we will need to develop specialized commercial operations to manage patient-specific ordering, tracking, and control. There are few companies that have developed this expertise. We must either develop commercial operations and marketing capabilities and a sales force or enter into arrangements with third parties to perform such operations and/or market and sell any of our product candidates that are approved by regulatory authorities. We do not know whether we will be able to enter into commercial operations or marketing and sales agreements with others on acceptable terms, if at all. We may not be able to successfully develop our own commercial operations capabilities or sales and marketing force for drug candidates for which we have retained or elect to retain marketing or co-promotion rights. As we develop our own commercial operations or marketing and sales capability, we may be competing with other companies that currently have experienced and well funded operations. Where we have licensed our products to third-party collaborators or licensees, we will be dependent on their commercial operations, sales and marketing expertise and resources, and any revenues we receive from those products will depend primarily on the sales and marketing efforts of others.

### ***Product liability and other claims against us may reduce demand for our products and/or result in substantial damages.***

We face an inherent risk of product liability exposure related to testing our product candidates in human clinical trials and will face even greater risks if we sell our product candidates commercially. An individual may bring a product liability claim against us if one of our product candidates causes, or merely appears to have caused, an injury. Product liability claims may result in:

decreased demand for our product candidates;

injury to our reputation;

withdrawal of clinical trial volunteers;

costs of related litigation; and

substantial monetary awards to plaintiffs.

We manufacture Oncophage from a patient's cancer cells, and a medical professional must inject Oncophage into the same patient from which it was manufactured. A patient may sue us if a hospital, a shipping company, or we fail to deliver the removed cancer tissue or that patient's Oncophage. We anticipate that the logistics of shipping will become more complex if the number of patients we treat increases and it is possible that all shipments of tumor and Oncophage will not be made without incident. Additionally, complexities unique to the logistics of commercial products may delay shipments and limit our ability to move commercial product in an

## **Table of Contents**

efficient manner without incident. Currently, we do not have insurance that covers loss of or damage to Oncophage or tumor material, and we do not know whether insurance will be available to us at a reasonable price or at all. We have limited product liability coverage for clinical research use of product candidates. Our product liability policy provides \$10.0 million aggregate coverage and \$10.0 million per occurrence coverage. This limited insurance coverage may be insufficient to fully cover us for future claims.

*If we do not comply with environmental laws and regulations, we may incur significant costs and potential disruption to our business.*

We use hazardous, infectious, and radioactive materials, and recombinant DNA in our operations, which have the potential of being harmful to human health and safety or the environment. We store these hazardous (flammable, corrosive, toxic), infectious, and radioactive materials, and various wastes resulting from their use, at our facilities pending use and ultimate disposal. We are subject to a variety of federal, state, and local laws and regulations governing use, generation, storage, handling, and disposal of these materials. We may incur significant costs complying with both current and future environmental health and safety laws and regulations. In particular, we are subject to regulation by the Occupational Safety and Health Administration, the Environmental Protection Agency, the Drug Enforcement Agency, the Department of Transportation, the Centers for Disease Control and Prevention, the National Institutes of Health, the International Air Transportation Association, and various state and local agencies. At any time, one or more of the aforementioned agencies could adopt regulations that may affect our operations. We are also subject to regulation under the Toxic Substances Control Act and the Resource Conservation Development programs.

Although we believe that our current procedures and programs for handling, storage, and disposal of these materials comply with federal, state, and local laws and regulations, we cannot eliminate the risk of accidents involving contamination from these materials. Although we have limited pollution liability coverage (\$2.0 million) and a workers' compensation liability policy, we could be held liable for resulting damages in the event of an accident or accidental release, and such damages could be substantially in excess of any available insurance coverage and could substantially disrupt our business.

*Our competitors in the biotechnology and pharmaceutical industries may have superior products, manufacturing capability, and/or marketing expertise.*

Our business may fail because we face intense competition from major pharmaceutical companies and specialized biotechnology companies engaged in the development of product candidates directed at cancer and infectious diseases. Several of these companies have products that utilize similar technologies and/or patient-specific medicine techniques, such as Dendreon, Nventa (formerly Stressgen), Favril, Accentia, Genitope, and Cell Genesys. Additionally, Liponova has completed a Phase 3 trial for its Reniale cancer vaccine in Germany for non-metastatic renal cell carcinoma and is expected to start a Phase 3 trial in the U.S. in 2008, and Oxford BioMedica and its partner Sanofi-Aventis are conducting a Phase 3 trial for their Trovax cancer vaccine for metastatic renal cell carcinoma. Patents have been issued in both the U.S. and Europe related to Nventa's heat shock protein technology.

More specifically, if we receive regulatory approvals, some of our product candidates may compete with approved therapies such as interleukin-2 and interferon-alpha for renal cell carcinoma and melanoma, which have generated substantial sales over a number of years. In addition, sorafenib, sunitinib, and temsirolimus have been approved in various countries for the treatment of patients with advanced renal cell carcinoma, or kidney cancer. Worldwide regulatory filings are expected to be submitted for another drug, everolimus, for advanced renal cell carcinoma in the second half of 2008. Sorafenib and sunitinib are also being developed for non-metastatic renal cell carcinoma. Other companies' product candidates, including Willex AG's Rencarex (WX-G250) and LipoNova's Reniale, are also being developed for non-metastatic renal cell carcinoma, including in Phase 3 clinical trials. Our product candidates, such as Aroplatin, may compete with existing approved chemotherapies or other chemotherapies that are in development by various companies, including GPC Biotech.



## **Table of Contents**

and Poniard Pharmaceuticals. In addition, prior to regulatory approval, we may compete for access to patients with other products in clinical development, with products approved for use in the indications we are studying, or with off-label use of products in the indications we are studying. We anticipate that we will face increased competition in the future as new companies enter markets we seek to address and scientific developments surrounding immunotherapy and other traditional cancer therapies continue to accelerate.

The remaining patent life for our QS-21 proprietary adjuvant is limited. Upon patent expiry, it is possible that our competitors may develop competing or generic saponin adjuvants. In addition, new license agreements are unlikely and may be impossible. While our license and supply agreements for QS-21 provide revenues for us and would typically provide royalties for at least 10 years after commercial launch, there is no guarantee that we will be able to collect royalties in the future.

Several other vaccine adjuvants are in development and could compete with QS-21 for inclusion in vaccines in development. These adjuvants include, but are not limited to, oligonucleotides, under development by Pfizer, Idera, Juvaris, and Dynavax, anti-CTLA-4 antibody, under development by Medarex, MF59 and SAF, under development by Novartis, and MPL, under development by GlaxoSmithKline. In addition, several companies, such as CSL Limited and Galenica, are developing saponin adjuvants, including synthetic formulations.

Additionally, many of our competitors, including large pharmaceutical companies, have greater financial and human resources and more experience than we do. Our competitors may:

commercialize their product candidates sooner than we commercialize our own;

develop safer or more effective therapeutic drugs or preventive vaccines and other therapeutic products;

implement more effective approaches to sales and marketing and capture some of our potential market share;

establish superior intellectual property positions;

discover technologies that may result in medical insights or breakthroughs, which render our drugs or vaccines obsolete, possibly before they generate any revenue; or

adversely affect our ability to recruit patients for our clinical trials.

### **Risks Related to our Common Stock**

#### ***Our officers and directors may be able to block proposals for a change in control.***

Antigenics Holdings L.L.C. is a holding company that owns shares of our common stock, and as of January 10, 2008, Antigenics Holdings L.L.C. controlled approximately 20% of our outstanding common stock. Due to this concentration of ownership, Antigenics Holdings L.L.C. can substantially influence all matters requiring a stockholder vote, including:

the election of directors;

the amendment of our organizational documents; or

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the approval of a merger, sale of assets, or other major corporate transaction.

Our Chief Executive Officer directly and indirectly owns approximately 47% of Antigenics Holdings L.L.C. In addition, several of our directors and officers directly and indirectly own approximately 4.5% of our outstanding common stock.

## **Table of Contents**

### ***The unaffiliated holders of certain convertible securities have the right to convert such securities into a substantial percentage of our outstanding common stock.***

According to publicly filed documents, Mr. Brad M. Kelley beneficially owns 5,546,240 shares of our outstanding common stock and 31,620 shares of our series A convertible preferred stock. The shares of preferred stock are currently convertible at any time into 2,000,000 shares of common stock at an initial conversion price of \$15.81, are non-voting, and carry a 2.5% annual dividend yield. If Mr. Kelley had converted all of the shares of preferred stock on January 10, 2008, he would have held approximately 13% of our outstanding common stock. We currently have a right of first refusal agreement with Mr. Kelley that provides us with limited rights to purchase certain of Mr. Kelley's shares if he proposes to sell them to a third party.

Mr. Kelley's substantial ownership position provides him with the ability to substantially influence the outcome of matters submitted to our stockholders for approval. Furthermore, collectively, Mr. Kelley and Antigenics Holdings L.L.C. control approximately 30% of our outstanding common stock as of January 10, 2008, providing substantial ability, if they vote in the same manner, to determine the outcome of matters submitted to a stockholder vote. If Mr. Kelley were to convert all of his preferred stock into common stock, the combined total would increase to 32%. Additional purchases of our common stock by Mr. Kelley also would increase both his own percentage of outstanding voting rights and the percentage combined with Antigenics Holdings L.L.C. While Mr. Kelley's shares of preferred stock do not carry voting rights, the shares of common stock issuable upon conversion carry the same voting rights as other shares of common stock.

On October 30, 2006, we issued \$25.0 million of our 2006 Notes to a group of institutional investors. These 2006 Notes, together with any interest paid in the form of additional 2006 Notes, are convertible into our common stock at an initial fixed conversion price of \$3.50 per share at the option of the investors. On January 10, 2008, one holder of the 2006 Notes had holdings, which if totally converted into shares of our common stock, would result in this holder owning 6,262,979 shares. If such holder had exercised such conversion right on January 10, 2008, such holder would have owned approximately 10% of our outstanding common stock. However, the holder's conversion right is limited by a 9.99% maximum percentage of ownership, in accordance with the terms of the 2006 Notes.

On September 10, 2007, we issued 10,000 shares of our new series B1 convertible preferred stock and 5,250 shares of our new series B2 convertible preferred stock to a single institutional investor. Shares of the series B1 convertible preferred stock permit the investor, within one year of the anniversary of closing, to purchase up to an additional \$10.0 million of common shares at a purchase price equal to the lesser of \$3.08 per share or a price calculated based on the then-prevailing price of our common stock minus \$0.30 per share. Shares of the series B2 convertible preferred stock permit the investor to purchase common shares for consideration of up to 35 percent of the total dollar amount previously invested pursuant to the agreement with the investor, including conversions of the series B1 convertible preferred stock, at a purchase price equal to the lesser of \$4.16 per common share or a price calculated based on the then-prevailing price of our common stock, and expire seven years from the date of issuance. The total number of shares of common stock issued or issuable to the holder of the class B convertible preferred stock cannot exceed 19.9% of our outstanding common stock.

While the 2006 Notes and the class B convertible preferred stock do not carry any voting rights, the common stock issuable upon conversions of such securities do carry the same voting rights as other shares of common stock. The ownership positions following any such conversions, along with any open market purchases by such holders, could provide the holders with the ability to substantially influence the outcome of matters submitted to our stockholders for approval.

### ***Provisions in our organizational documents could prevent or frustrate attempts by stockholders to replace our current management.***

Our certificate of incorporation and bylaws contain provisions that could make it more difficult for a third party to acquire us without consent of our Board of Directors. Our certificate of incorporation provides for a

## **Table of Contents**

staggered board and removal of directors only for cause. Accordingly, stockholders may elect only a minority of our board at any annual meeting, which may have the effect of delaying or preventing changes in management. In addition, under our certificate of incorporation, our Board of Directors may issue additional shares of preferred stock and determine the terms of those shares of stock without any further action by our stockholders. Our issuance of additional preferred stock could make it more difficult for a third party to acquire a majority of our outstanding voting stock and thereby effect a change in the composition of our Board of Directors. Our certificate of incorporation also provides that our stockholders may not take action by written consent. Our bylaws require advance notice of stockholder proposals and director nominations and permit only our President or a majority of the Board of Directors to call a special stockholder meeting. These provisions may have the effect of preventing or hindering attempts by our stockholders to replace our current management. In addition, Delaware law prohibits a corporation from engaging in a business combination with any holder of 15% or more of its capital stock until the holder has held the stock for three years unless, among other possibilities, the Board of Directors approves the transaction. Our Board of Directors may use this provision to prevent changes in our management. Also, under applicable Delaware law, our Board of Directors may adopt additional anti-takeover measures in the future.

*Our stock has generally had low trading volume, and its public trading price has been volatile.*

Between our initial public offering on February 4, 2000 and December 31, 2007, and for the year ended December 31, 2007, the closing price of our common stock has fluctuated between \$1.54 and \$52.63 per share and \$1.57 and \$4.43 per share, respectively, with an average daily trading volume for the year ended December 31, 2007 of approximately 461,000 shares. The market may experience significant price and volume fluctuations that are often unrelated to the operating performance of individual companies. In addition to general market volatility, many factors may have a significant adverse effect on the market price of our stock, including:

continuing operating losses, which we expect over the next several years as we continue our development activities;

announcements of decisions made by public officials;

results of our preclinical studies and clinical trials;

announcements of technological innovations, new commercial products, or progress toward commercialization by our competitors or peers;

developments concerning proprietary rights, including patent and litigation matters;

publicity regarding actual or potential results with respect to product candidates under development by us or by our competitors;

regulatory developments; and

quarterly fluctuations in our financial results.

*The sale of a significant number of shares could cause the market price of our stock to decline.*

The sale by us or the resale by stockholders of a significant number of shares of our common stock could cause the market price of our common stock to decline. As of December 31, 2007, we had approximately 47,551,000 shares of common stock outstanding. All of these shares are eligible for sale on the NASDAQ Global Market, although certain of the shares are subject to sales volume and other limitations. In addition, we have filed registration statements to permit the sale of 10,436,831 shares of common stock under our equity incentive plan and certain equity plans that we assumed in the acquisitions of Aquila Biopharmaceuticals, Inc. and Aronex Pharmaceuticals, Inc. We have also filed registration statements to permit the sale of 450,000 shares of common stock under our employee stock purchase plan, to permit the sale of 250,000 shares of common stock under our directors' deferred compensation plan, and to permit the sale of 17,417,434 shares of common stock pursuant to the

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Securities Purchase Agreement dated January 9, 2008. The market price of our common stock may decrease based on the expectation of such sales.

## **Table of Contents**

As of December 31, 2007, options to purchase 6,782,901 shares of our common stock with a weighted average exercise price per share of \$5.75 were outstanding. Many of these options are subject to vesting that generally occurs over a period of up to four years following the date of grant. As of December 31, 2007, we have 440,878 nonvested shares outstanding.

*Because we are a relatively small public company, we believe we have been disproportionately negatively impacted by the Sarbanes-Oxley Act of 2002 and related regulations, which have increased our costs and required additional management resources.*

The Sarbanes-Oxley Act of 2002, which became law in July 2002, has required changes in some of our corporate governance, securities disclosure, and compliance practices. In response to the requirements of that Act, the SEC and the NASDAQ have promulgated new rules and listing standards covering a variety of subjects. Compliance with these new rules and listing standards significantly increased our legal, financial, and accounting costs, which we expect to increase as we expand our operations. In addition, the requirements have taxed a significant amount of management's and the Board of Directors' time and resources. Likewise, these developments have made it more difficult for us to attract and retain qualified members of our Board of Directors, particularly independent directors, or qualified executive officers. Because we are a relatively small public company, we believe we have been disproportionately negatively impacted by these changes in securities laws and regulations, which have increased our costs and required additional management resources.

Our internal control over financial reporting (as defined in Rules 13a-15 of the Securities Exchange Act) is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of our financial statements for external purposes in accordance with generally accepted accounting principles. Because of its inherent limitations, internal control over financial reporting may not prevent or detect all deficiencies or weaknesses in our financial reporting. While our management has concluded that there were no material weaknesses in our internal control over financial reporting as of December 31, 2007, our procedures are subject to the risk that our controls may become inadequate because of changes in conditions or as a result of a deterioration in compliance with such procedures. No assurance is given that our procedures and processes for detecting weaknesses in our internal control over financial reporting will be effective.

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

We have received no written comments from the staff of the SEC regarding our periodic or current reports that (1) we believe are material, (2) were issued not less than 180 days before the end of our 2007 fiscal year, and (3) remain unresolved.

### **Item 2. Properties**

We lease a 162,000 square foot facility in Lexington, Massachusetts, under a lease agreement that terminates in August 2013. We have an option to renew this lease for two additional ten-year periods. We began occupying approximately 94,000 square feet of this facility beginning in October 2003. Based on the terms of our lease agreement, our space increased to 132,000 square feet in August 2005 with a second expansion to 162,000 square feet in September 2006.

We also lease approximately 40,000 square feet of laboratory, office, and manufacturing space in Framingham, Massachusetts under a lease agreement that terminates in September 2010. We have an option to renew the lease for two additional five-year periods. We have sublet this entire facility.

We maintain our corporate offices in New York, New York, in an office building in which we lease approximately 5,400 square feet. Our New York lease terminates in April 2012.

In addition, on December 15, 2006, we terminated our lease for approximately 30,000 square feet of laboratory and office space in The Woodlands, Texas, a suburb of Houston. We were not actively using this facility.

## **Table of Contents**

The Company believes substantially all of its property and equipment is in good condition and that it has sufficient capacity to meet its current operational needs. We do not anticipate experiencing significant difficulty in retaining occupancy of any of our manufacturing or office facilities and will do so through lease renewals prior to expiration or through replacing them with equivalent facilities.

### **Item 3. Legal Proceedings**

Antigenics, our Chairman and Chief Executive Officer, Garo H. Armen, Ph.D., and two investment banking firms that served as underwriters in our initial public offering have been named as defendants in a civil class action lawsuit filed on November 5, 2001 in the Federal District Court for the Southern District of New York on behalf of a class of purchasers of our stock between February 3, 2000 and December 6, 2000. Similar complaints were filed against about 300 other issuers, their underwriters, and in many instances their directors and officers. These cases have been coordinated under the caption *In re Initial Public Offering Securities Litigation*, Civ. No. 21 MC 92 (SAS), by order dated August 9, 2001. The suit against Antigenics and Dr. Armen alleges that the brokerage arms of the investment banking firms charged secret excessive commissions to certain of their customers in return for allocations of our stock in the offering. The suit also alleges that shares of our stock were allocated to certain of the investment banking firms' customers based upon agreements by such customers to purchase additional shares of our stock in the secondary market. The complaint alleges that Antigenics is liable under Section 11 of the Securities Act of 1933, as amended (the Securities Act), and Dr. Armen is liable under Sections 11 and 15 of the Securities Act because our registration statement did not disclose these alleged practices. On April 19, 2002, the plaintiffs in this action filed an amended class action complaint, which contains new allegations. Again, similar amended complaints were filed with respect to the other companies. In addition to the claims in the earlier complaint, the amended complaint alleges that Antigenics and Dr. Armen violated Sections 10(b) and 20 of the Securities Exchange Act and SEC Rule 10b-5 by making false and misleading statements and/or omissions in order to inflate our stock price and conceal the investment banking firms' alleged secret arrangements. The claims against Dr. Armen, in his individual capacity, have been dismissed without prejudice. On July 15, 2002, Antigenics and Dr. Armen joined the Issuer Defendants' Motion to Dismiss the Consolidated Amended Complaints. By order of the court, this motion set forth all common issues (i.e., all grounds for dismissal common to all or a significant number of Issuer Defendants). The hearing on the Issuer Defendants' Motion to Dismiss and the other Defendants' motions to dismiss was held on November 1, 2002. On February 19, 2003, the court issued its opinion and order on the Issuer Defendants' Motion to Dismiss. The court granted Antigenics' motion to dismiss the Rule 10b-5 and Section 20 claims with leave to amend and denied our motion to dismiss the Section 11 and Section 15 claims. On June 14, 2004, papers formalizing a proposed settlement among the plaintiffs, Issuer Defendants, and insurers were presented to the Federal District Court for the Southern District of New York. On February 15, 2005, the court granted preliminary approval of the settlement. On August 31, 2005, the court issued an order confirming preliminary approval of the settlement. The settlement remained subject to a number of conditions, including final court approval. In December 2006, the appellate court overturned the certification of classes in the six test cases that were selected by the underwriter defendants and plaintiffs in the coordinated proceedings. Class certification was one of the conditions of the settlement. Accordingly, on June 25, 2007, the court entered an order terminating the proposed settlement based on a stipulation among the parties to the settlement. It is uncertain whether there will be any revised or future settlement. To date, the plaintiffs have not asserted a specific amount of damages and, at this time, we cannot make a reliable estimate of possible loss, if any, related to this litigation. Accordingly, no accrual has been recorded at December 31, 2007.

On October 12, 2005, a third party filed a notice of opposition in the European Patent Office to European patent EP 0750513 B1 which has claims relating to AG-702/707 and to which we hold the exclusive license. On January 21, 2008, the opposition division of the European Patent Office issued its decision revoking the patent. This decision may be appealed by March 21, 2008. For strategic reasons, we have decided not to appeal this decision.

We currently are a party, or may become a party, to other legal proceedings as well. While we currently believe that the ultimate outcome of any of these proceedings will not have a material adverse effect on our

## **Table of Contents**

financial position, results of operations, or liquidity, litigation is subject to inherent uncertainty. Furthermore, litigation consumes both cash and management attention.

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

No matters were submitted to stockholders for a vote during the fourth quarter of 2007.

### **Executive Officers of the Registrant**

Set forth below is certain information regarding our current and certain former executive officers, including their age, as of March 1, 2008:

| <b>Name</b>            | <b>Age</b> | <b>Title</b>                                             |
|------------------------|------------|----------------------------------------------------------|
| Gar H. Armen, Ph.D.    | 55         | Chairman of the Board and Chief Executive Officer        |
| Shalini Sharp          | 33         | Vice President and Chief Financial Officer               |
| Christine M. Klaskin   | 42         | Vice President, Finance and Principal Accounting Officer |
| Kerry A. Wentworth     | 35         | Vice President, Regulatory Affairs & Clinical Operations |
| Roman M. Chiciz, Ph.D. | 45         | Former Senior Vice President, Research and Development   |

GARO H. ARMEN, PH.D. is Chairman and Chief Executive Officer of Antigenics, the biotechnology company he co-founded with Pramod Srivastava in 1994. From mid-2002 through 2004, he was Chairman of the Board of Directors for the biopharmaceutical company Elan Corporation, plc. Dr. Armen is also the founder and President of the Children of Armenia Fund (COAF), a charitable organization established in 2000 that is dedicated to the positive development of the children and youth of Armenia.

SHALINI SHARP joined Antigenics in 2003, and managed strategic planning, investor relations, and financing and acquisition transactions. Prior to this, she was Director of Strategic Planning at Elan Corporation, plc, where she served as Chief of Staff to the Chairman of the Board during the restructuring process and drove to completion a number of strategic corporate and financial transactions. Ms. Sharp was previously a management consultant at McKinsey & Company, specializing in the pharmaceutical and medical device industries. She has also worked in investment banking at Goldman, Sachs & Company, primarily in the health care field. Ms. Sharp received both her bachelor's degree and MBA from Harvard University.

CHRISTINE M. KLASKIN joined Antigenics in 1996 as finance manager and has held various positions within the finance department. Prior to Antigenics, she was at Arthur Andersen from 1987, most recently as an audit manager. A certified public accountant, Ms. Klaskin received her Bachelor of Accountancy from The George Washington University.

KERRY A. WENTWORTH joined Antigenics in 2005 and previously served as Senior Director of Regulatory Affairs at Genelabs Technologies, where she was responsible for regulatory and quality functions. There, she focused on late-stage clinical development and subsequent U.S. and European commercial application filings for the company's lead product Prestara<sup>®</sup>, a treatment for systemic lupus erythematosus. Prior to Genelabs, Ms. Wentworth held various positions in regulatory affairs at Shaman Pharmaceuticals and at Genzyme Corporation. With more than 12 years of regulatory experience, Ms. Wentworth has considerable expertise in the development, global licensing, and post-marketing activities associated with drug and biological products. Ms. Wentworth received a bachelor's degree in pre-veterinary medicine from the University of New Hampshire.



**Table of Contents**

ROMAN M. CHICZ, PH.D. was our Senior Vice President, Research and Development from 2004 to mid 2007. Prior to joining Antigenics, Dr. Chicz was a co-founder and Vice President of Discovery Research at ZYCOS Inc. from its inception in 1996 until its acquisition in 2004. During his tenure at ZYCOS, Dr. Chicz was responsible for the identification and validation of novel anti-viral and oncology drugs, product development support, and management of the Aventis Pasteur oncology alliance. He also played a key role in business development and private financing of the company. Prior to ZYCOS, Dr. Chicz served as a principal scientist and postdoctoral fellow at Harvard University. Dr. Chicz received his bachelor's degree in chemistry from Occidental College and his doctorate in biochemistry from Purdue University.

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

Our common stock trades on the NASDAQ Global Market under the symbol AGEN .

The following table sets forth, for the periods indicated, the high and low sale prices per share of our common stock as reported on the NASDAQ Global Market.

|                | High    | Low     |
|----------------|---------|---------|
| <b>2006</b>    |         |         |
| First Quarter  | \$ 7.22 | \$ 2.50 |
| Second Quarter | 2.83    | 1.67    |
| Third Quarter  | 2.20    | 1.38    |
| Fourth Quarter | 2.57    | 1.53    |
| <b>2007</b>    |         |         |
| First Quarter  | 2.32    | 1.54    |
| Second Quarter | 5.42    | 2.22    |
| Third Quarter  | 3.21    | 2.15    |
| Fourth Quarter | 3.45    | 1.95    |

As of March 1, 2008, there were approximately 1,950 holders of record and approximately 16,900 beneficial holders of our common stock.

We have never paid cash dividends on our common stock, and we do not anticipate paying any cash dividends in the foreseeable future. We currently intend to retain future earnings, if any, for the future operation and expansion of our business. Any future payment of dividends on our common stock will be at the discretion of our Board of Directors and will depend upon, among other things, our earnings, financial condition, capital requirements, level of indebtedness and other factors that our Board of Directors deems relevant.

***Stock Performance***

The following graph shows the cumulative total stockholder return on our common stock over the period from December 31, 2002 to December 31, 2007, as compared with that of the NASDAQ Stock Market (U.S. Companies) Index and the NASDAQ Biotechnology Index, based on an initial investment of \$100 in each on December 31, 2002. Total stockholder return is measured by dividing share price change plus dividends, if any, for each period by the share price at the beginning of the respective period, and assumes reinvestment of dividends.

This stock performance graph shall not be deemed filed with the SEC or subject to Section 18 of the Securities Exchange Act, nor shall it be deemed incorporated by reference in any of our filings under the Securities Act.

**Table of Contents**

**COMPARISON OF CUMULATIVE TOTAL RETURN OF ANTIGENICS INC.,  
NASDAQ STOCK MARKET (U.S. COMPANIES) INDEX  
AND NASDAQ BIOTECHNOLOGY INDEX**

|                            | 12/31/02 | 12/31/03 | 12/31/04 | 12/31/05 | 12/31/06 | 12/31/07 |
|----------------------------|----------|----------|----------|----------|----------|----------|
| Antigenics Inc.            | 100.00   | 110.74   | 98.83    | 46.48    | 17.87    | 19.92    |
| NASDAQ Stock Market (U.S.) | 100.00   | 150.01   | 162.89   | 165.13   | 180.85   | 198.60   |
| NASDAQ Biotechnology Index | 100.00   | 145.75   | 154.68   | 159.06   | 160.69   | 168.05   |

## **Table of Contents**

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

We have derived the consolidated balance sheet data set forth below as of December 31, 2007 and 2006, and the consolidated statement of operations data for each of the years in the three-year period ended December 31, 2007, from our audited consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

You should read the selected consolidated financial data in conjunction with Management's Discussion and Analysis of Financial Condition and Results of Operations, our consolidated financial statements, and the notes to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Given our history of incurring operating losses, management believes that it is more likely than not that any deferred tax assets will not be realized through future earnings. Therefore, no income tax benefit has been recognized in the consolidated statements of operations because of the loss before income taxes, and the need to recognize a valuation allowance on the portion of our deferred tax assets, which will not be offset by the reversal of deferred tax liabilities (see (3) below).

Changes in cash, cash equivalents, and short-term investments, total current assets, total assets, and stockholders' (deficit) equity in the periods presented below include the effects of the receipt of net proceeds from our debt offerings, equity offerings, the exercise of stock options and warrants, and employee stock purchases that totaled approximately \$4.6 million, \$25.4 million, \$48.3 million, \$54.6 million, and \$92.5 million in 2007, 2006, 2005, 2004, and 2003, respectively. In addition, in January 2008, we completed a private placement of shares of our common stock and warrants, raising net proceeds of \$25.8 million, after deducting offering costs of \$296,000.

**Table of Contents**

|                                                                                  | 2007        | For the Year Ended December 31,<br>2006 2005 2004 2003<br>(In thousands, except per share data) |                           |             |             |
|----------------------------------------------------------------------------------|-------------|-------------------------------------------------------------------------------------------------|---------------------------|-------------|-------------|
| Consolidated Statement of Operations Data:                                       |             |                                                                                                 |                           |             |             |
| Revenue                                                                          | \$ 5,552    | \$ 692                                                                                          | \$ 630                    | \$ 707      | \$ 985      |
| Operating Expenses:                                                              |             |                                                                                                 |                           |             |             |
| Cost of sales                                                                    |             |                                                                                                 |                           | (5)         |             |
| Research and development                                                         | (21,789)    | (28,643)                                                                                        | (47,080)                  | (41,718)    | (46,264)    |
| General and administrative                                                       | (17,041)    | (21,288)                                                                                        | (25,868)                  | (25,784)    | (21,682)    |
| Acquired in-process research and development (1)                                 |             |                                                                                                 |                           | (2,888)     |             |
| Restructuring costs                                                              |             | (1,374)                                                                                         | (1,596)                   |             |             |
| Loss from operations                                                             | (33,278)    | (50,613)                                                                                        | (73,914)                  | (69,688)    | (66,961)    |
| Non-operating income                                                             | 1           | 141                                                                                             | 1                         | 8           |             |
| Interest (expense) income, net                                                   | (3,518)     | (1,409)                                                                                         | (191)                     | 929         | 919         |
| Loss from continuing operations                                                  | (36,795)    | (51,881)                                                                                        | (74,104)                  | (68,751)    | (66,042)    |
| Income from discontinued operations (2)                                          |             |                                                                                                 |                           | 12,589      | 108         |
| Net loss (3)                                                                     | (36,795)    | (51,881)                                                                                        | (74,104)                  | (56,162)    | (65,934)    |
| Dividends on series A convertible preferred stock                                | (790)       | (790)                                                                                           | (790)                     | (790)       | (224)       |
| Net loss attributable to common stockholders                                     | \$ (37,585) | \$ (52,671)                                                                                     | \$ (74,894)               | \$ (56,952) | \$ (66,158) |
| Loss from continuing operations per common share, basic and diluted              | \$ (0.81)   | \$ (1.15)                                                                                       | \$ (1.64)                 | \$ (1.56)   | \$ (1.70)   |
| Income from discontinued operations per common share, basic and diluted          | \$          | \$                                                                                              | \$                        | 0.28        | \$          |
| Net loss attributable to common stockholders per common share, basic and diluted | \$ (0.81)   | \$ (1.15)                                                                                       | \$ (1.64)                 | \$ (1.27)   | \$ (1.70)   |
| Weighted average number of shares outstanding, basic and diluted                 | 46,512      | 45,809                                                                                          | 45,577                    | 44,685      | 38,989      |
|                                                                                  | 2007        | 2006                                                                                            | December 31,<br>2005 2004 |             | 2003        |
| Consolidated Balance Sheet Data:                                                 |             |                                                                                                 |                           |             |             |
| Cash, cash equivalents, and short-term investments                               | \$ 18,679   | \$ 40,095                                                                                       | \$ 61,748                 | \$ 86,921   | \$ 87,978   |
| Total current assets                                                             | 20,782      | 42,298                                                                                          | 66,962                    | 92,604      | 91,821      |
| Total assets                                                                     | 44,537      | 72,952                                                                                          | 104,151                   | 133,058     | 140,080     |
| Total current liabilities                                                        | 8,383       | 9,078                                                                                           | 19,145                    | 19,204      | 22,105      |
| Long-term debt, less current portion                                             | 77,401      | 75,333                                                                                          | 50,044                    | 4,512       | 10,245      |
| Stockholders' (deficit) equity                                                   | (47,060)    | (17,393)                                                                                        | 31,899                    | 106,443     | 105,246     |

- (1) We recorded a charge to operations for the write-off of in-process research and development acquired with the purchase of intellectual property from Mojave Therapeutics Inc. in July 2004.
- (2) In March 2004, we sold our manufacturing rights and related assets for a feline leukemia virus (FeLV) vaccine to Virbac S.A. The results of operations of the FeLV activity has been treated as discontinued operations for all periods presented.
- (3) Given our history of incurring operating losses, no income tax benefit has been recognized in our consolidated statements of operations because of the loss before income taxes, and the need to recognize a valuation allowance on the portion of our deferred tax assets, which will not be offset by the reversal of deferred tax liabilities.

## **Table of Contents**

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

We are currently researching and/or developing technologies and product candidates to treat cancers and infectious diseases. Since our inception in March 1994, our activities have primarily been associated with the development of our heat shock protein technology and our most advanced product candidate, Oncophage® (vitespen), a patient-specific therapeutic cancer vaccine. Our business activities have included product research and development, intellectual property prosecution, manufacturing therapeutic vaccines for clinical trials, regulatory and clinical affairs, corporate finance and development activities, marketing, and integration of our acquisitions.

We have incurred significant losses since our inception. As of December 31, 2007, we had an accumulated deficit of \$498.6 million. Since our inception, we have financed our operations primarily through the sale of equity and convertible notes, interest income earned on cash, cash equivalents, and short-term investment balances, and debt provided through secured lines of credit. We believe, based on our current plans and activities, that our working capital resources at December 31, 2007, along with the proceeds from our financing completed in January 2008, and the estimated proceeds from our license, supply, and collaborative agreements, will be sufficient to satisfy our liquidity requirements into 2009. In addition, we expect to attempt to raise additional funds in advance of depleting our current funds. Satisfying long-term liquidity needs may require the successful commercialization of product candidates and will require additional capital.

Guidance received from past discussions with the FDA indicates that further clinical studies must be conducted to demonstrate to them the efficacy and safety of Oncophage. At the appropriate time, we intend to seek a meeting with the FDA to discuss the results of the updated analyses utilizing data through March 2007 to determine whether there is an opportunity to file a biologics license application ( BLA ) on the basis of these results with appropriate commitments to conduct further clinical investigations to support the efficacy of Oncophage in renal cell carcinoma. Because evidence of clinically significant improvement has been observed in a subgroup analysis and was not demonstrated in the pre-specified analysis of the primary and secondary endpoints of the Phase 3 study of Oncophage in renal cell carcinoma, this trial is likely not sufficient to support a BLA for product approval, based on existing standards. Furthermore, this trial may not be sufficient to support approval outside of the U.S.

We are exploring the steps necessary to seek approval of Oncophage in ex-U.S. commercial markets and/or in named patient programs. In conjunction with this process, on June 25, 2007, we completed the submission of an application for marketing authorization with the Russian Ministry of Public Health for the use of Oncophage in the treatment of kidney cancer patients at intermediate risk for disease recurrence. Until we receive an official decision from the Russian Ministry of Public Health, we cannot be certain of the outcome.

On July 6, 2006, we entered into an expanded license agreement (the GSK license agreement ) and an expanded Manufacturing Technology Transfer and Supply Agreement (the GSK supply agreement ) with GlaxoSmithKline Biologicals SA ( GSK ) for the use of QS-21, an investigational adjuvant used in numerous vaccines under development. QS-21 is a component included in several adjuvant systems. Under the terms of the agreements, we agreed to supply QS-21 to GSK through 2014 and to transfer manufacturing technologies under the GSK supply agreement. In conjunction with the GSK license agreement and the GSK supply agreement, we received a \$3.0 million up-front non-refundable payment in July 2006. In February 2007, we achieved a milestone related to the transfer of manufacturing technologies to GSK and received a payment of \$2.0 million. We are entitled to receive royalties on net sales for a period of at least 10 years after the first commercial sale under the GSK supply agreement.

On July 20, 2007, we executed a binding letter of intent with GSK amending the GSK supply agreement to accelerate GSK's commercial grade QS-21 manufacturing rights previously granted in July 2006. Accordingly, from the effective date of the letter, GSK has the right to manufacture all of its requirements of commercial grade

## **Table of Contents**

QS-21. In addition, the parties have amended their purchase and supply obligations with respect to pre-commercial grade QS-21. In accordance with the terms of the letter, upon our election, GSK is obligated to supply us (or our affiliates, licensees, or customers) certain quantities of commercial grade QS-21 for a stated period of time. As consideration for our entering into the letter, we received a \$2.0 million up-front non-refundable payment from GSK in August 2007, in lieu of a milestone payment that would have otherwise been payable under the GSK supply agreement. In addition, GSK is obligated to make payments to us totaling \$5.25 million through December 2012, for manufacturing profits that were anticipated to have otherwise been payable under the GSK supply agreement. Except as expressly provided in the letter, all other financial obligations of GSK under the GSK supply agreement, including royalty payments, remain unchanged. The letter does not affect the rights and obligations of the parties under the July 6, 2006 GSK license agreement.

On September 10, 2007, we issued 1,623,377 shares of our common stock at a price of \$3.08 per share to a single institutional investor. Net proceeds, after deducting offering expenses paid by us of \$259,000, were \$4.7 million. In conjunction with this transaction, we also issued to the investor 10,000 shares of our new series B1 convertible preferred stock and 5,250 shares of our new series B2 convertible preferred stock (collectively, our class B convertible preferred stock). Shares of the series B1 convertible preferred stock permit the investor, within one year of the anniversary of closing, to purchase up to an additional \$10.0 million of common shares at a purchase price equal to the lesser of \$3.08 per share or a price calculated based on the then-prevailing price of our common stock minus \$0.30 per share. Shares of the series B2 convertible preferred stock permit the investor to purchase common shares for consideration of up to 35 percent of the total dollar amount previously invested pursuant to the agreement with the investor, including conversions of the series B1 convertible preferred stock, at a purchase price equal to the lesser of \$4.16 per common share or a price calculated based on the then-prevailing price of our common stock, and such right expires seven years from the date of issuance. The total number of shares of common stock issued or issuable to the holder of the class B convertible preferred stock cannot exceed 19.9% of our outstanding common stock. No dividends are paid on the class B convertible preferred stock and there are no liquidation preferences.

On January 9, 2008, we entered into a private placement agreement that included (i) 8,708,717 shares of common stock, (ii) warrants to acquire up to 8,708,717 shares of common stock at \$3.00 per share, and (iii) unit warrants, which, if exercisable due to a Triggering Event as that term is defined in the applicable warrant, permit a holder to acquire up to 8,708,717 shares of common stock at \$3.00 per share and warrants to acquire up to an additional 8,708,717 shares of common stock at \$3.00 per share. We raised net proceeds in the private placement of \$25.8 million, after deducting offering costs of \$296,000.

## **Historical Results of Operations**

### ***Year Ended December 31, 2007 Compared To The Year Ended December 31, 2006***

**Revenue:** We generated revenue of \$5.6 million and \$692,000 during the years ended December 31, 2007 and 2006, respectively. Revenue includes revenue earned on shipments of QS-21 to our QS-21 licensees, license fees and royalties earned, and in 2007, milestones achieved. In 2007, we recognized \$1.0 million of revenue from shipments of QS-21, \$2.0 million of revenue related to a milestone payment received from GSK in February 2007 for the transfer of manufacturing technologies to GSK, and recorded \$788,000 from the amortization of deferred revenue related to other payments received from GSK. In addition, in June 2007, we earned revenue of \$1.0 million related to a milestone payment received from Elan Corporation, plc, which has initiated a Phase 2 study of their Alzheimer's disease product candidate that contains QS-21, through its affiliate Elan Pharmaceuticals International Limited. Revenue earned on shipments of QS-21 was \$451,000 in 2006.

**Research and Development:** Research and development expenses include the costs associated with our internal research and development activities, including compensation and benefits, occupancy costs, clinical manufacturing costs, administrative costs, and research and development conducted for us by outside advisors, such as sponsored university-based research partners, and services provided by clinical research organizations. Research and development expense decreased 24% to \$21.8 million for the year ended December 31, 2007 from

## **Table of Contents**

\$28.6 million for the year ended December 31, 2006. The decrease was partially due to a \$2.2 million reduction in payroll and personnel-related expenses due to the workforce reduction in April 2006 and subsequent attrition. There was an additional decrease of \$2.8 million in our clinical trial-related expenses due to our restructuring plan and the temporary discontinuance and/or conclusion of late-stage clinical programs. Other expenses decreased \$2.8 million due to fewer ongoing projects and cost containment efforts. These reductions were partially offset by an increase in non-cash, stock-based compensation expense of \$966,000.

*General and Administrative:* General and administrative expenses consist primarily of personnel costs, facility expenses, and professional fees. General and administrative expenses decreased 20% to \$17.0 million for the year ended December 31, 2007 from \$21.3 million for the year ended December 31, 2006. This decrease is a reflection of our cost-cutting efforts. Specific cost reductions included a \$1.5 million reduction in payroll and personnel-related expenses due mainly to the workforce reduction April 2006, as well as reductions in professional fees of \$686,000. In addition, in 2006 we recorded an other than temporary decline in the value of our investment in Applied Genomic Technology Capital Fund ( AGTC ), a limited partnership, of \$806,000 as a result of our formal plan to sell our limited partner interest. Non-cash, stock-based compensation expense also decreased \$947,000 in 2007.

*Restructuring Costs:* In April 2006, we commenced the implementation of a plan to expand our restructuring activities that began in 2005 by refocusing our programs and priorities with the goal of reducing our net cash burn (cash used in operating activities plus capital expenditures, debt repayments, and dividend payments) and eliminated 42 positions. We recorded total restructuring charges of \$757,000 for the year ended December 31, 2006. During 2006, we also wrote-off certain assets that were determined to not be required for our updated business strategy. This resulted in impairment charges of \$617,000.

*Non-operating Income:* Non-operating income of \$141,000 for the year ended December 31, 2006 represented a lease termination fee received from one of our sublessees and proceeds from the sale of certain assets.

*Interest Expense:* Interest expense increased to \$5.0 million for the year ended December 31, 2007 from \$3.3 million for the year ended December 31, 2006. This increase relates primarily to interest on our 8% senior secured convertible notes (the 2006 Notes ) due 2011 that were issued on October 30, 2006. Through December 31, 2007, interest on the 2006 Notes has been paid in the form of additional senior secured convertible notes, in accordance with the terms of the applicable agreement.

*Interest Income:* Interest income decreased 22% to \$1.5 million for the year ended December 31, 2007 from \$1.9 million for the year ended December 31, 2006. This decrease is primarily attributable to a decrease in cash, cash equivalents, and short-term investments, partially offset by a rise in interest rates earned on our cash, cash equivalents, and short-term investments. Our average interest rate earned increased from 4.6% for the year ended December 31, 2006 to 5.3% for the year ended December 31, 2007.

### ***Year Ended December 31, 2006 Compared To The Year Ended December 31, 2005***

*Revenue:* We generated \$692,000 and \$630,000 of research and development revenue during the years ended December 31, 2006 and 2005, respectively. Revenues from research and development activities include revenues earned on shipments of QS-21 to our QS-21 licensees, license fees earned, and in 2006, royalties earned.

*Research and Development:* Research and development expenses include the costs associated with our internal research and development activities, including compensation and benefits, occupancy costs, clinical manufacturing costs, administrative costs, and research and development conducted for us by outside advisors, such as sponsored university-based research partners, and services provided by clinical research organizations. Research and development expenses decreased 39% to \$28.6 million for the year ended December 31, 2006 from



**Table of Contents**

\$47.1 million for the year ended December 31, 2005. The decrease was partially due to a \$9.4 million reduction in payroll and personnel-related expenses attributable to workforce reductions in June and December 2005 and in April 2006. There was an additional decrease of \$6.3 million in our clinical trial-related expenses due to our restructuring plan and the temporary discontinuance and/or conclusion of late-stage clinical programs. Other expenses decreased \$2.8 million due to fewer ongoing projects and cost containment efforts.

*General and Administrative:* General and administrative expenses consist primarily of personnel costs, facility expenses, and professional fees. In addition, in 2006 general and administrative expenses included an \$806,000 impairment charge for an other than temporary decline in the value of our investment in AGTC. General and administrative expenses decreased 18% to \$21.3 million for the year ended December 31, 2006 from \$25.9 million for the year ended December 31, 2005. This decrease was a reflection of our cost-cutting efforts. Specific cost reductions included a \$4.2 million reduction in payroll and personnel-related expenses due mainly to the workforce reductions in June and December 2005 and in April 2006, as well as a reduction in professional fees of \$3.5 million. These reductions were partially offset by an increase in non-cash, stock-based compensation expense of \$3.1 million primarily due to the adoption of Statement of Financial Accounting Standards ( SFAS ) No. 123R, *Share-Based Payment* ( SFAS No. 123R ) as of January 1, 2006.

*Restructuring Costs:* In June 2005, we took steps to improve our operating efficiency through the prioritization of our development portfolio and a streamlining of our infrastructure. These steps resulted in the recording of restructuring charges of \$606,000. In December 2005, we further updated our business strategy and refocused our programs and priorities, including the postponement and deceleration of a number of our projects. These actions resulted in additional charges of \$990,000 being recorded in December 2005 and \$112,000 being recorded during the quarter ended March 31, 2006. In April 2006, we commenced the implementation of a plan to further restructure, refocusing our programs and priorities with the goal of reducing our net cash burn (cash used in operating activities plus capital expenditures, debt repayments, and dividend payments). We recorded charges of \$645,000 at that time, resulting in total charges of \$757,000 for the year ended December 31, 2006. These actions resulted in a combined total headcount reduction of 133 positions.

A summary of restructuring costs is as follows (in thousands).

| <b>Year Ended December 31, 2006:</b> | <b>Liability at<br/>December 31, 2005</b> | <b>Charge<br/>to<br/>Operations</b> | <b>Amount<br/>Paid</b> | <b>Liability at<br/>December 31, 2006</b> |
|--------------------------------------|-------------------------------------------|-------------------------------------|------------------------|-------------------------------------------|
| Severance and payroll taxes          | \$ 832                                    | \$ 649                              | \$ (1,481)             | \$                                        |
| Outplacement                         | 89                                        | 39                                  | (128)                  |                                           |
| Other                                | 33                                        | 69                                  | (102)                  |                                           |
| Total                                | \$ 954                                    | \$ 757                              | \$ (1,711)             | \$                                        |

During 2006, we also wrote-off certain assets that were determined to not be required for our updated business strategy. This resulted in impairment charges of \$617,000.

*Non-operating Income:* Non-operating income of \$141,000 for the year ended December 31, 2006 represented a lease termination fee received from one of our sublessees and proceeds from the sale of certain assets.

*Interest Expense:* Interest expense increased to \$3.3 million for the year ended December 31, 2006 from \$3.0 million for the year ended December 31, 2005. This increase related primarily to interest on our 2006 Notes, which were issued on October 30, 2006.

*Interest Income:* Interest income decreased 32% to \$1.9 million for the year ended December 31, 2006 from \$2.8 million for the year ended December 31, 2005. This decrease was primarily attributable to a decrease in cash, cash equivalents, and short-term investments, partially offset by a rise in interest rates earned on our cash,

**Table of Contents**

cash equivalents, and short-term investments. Our average interest rate earned increased from 2.9% for the year ended December 31, 2005 to 4.6% for the year ended December 31, 2006.

**Research and Development Programs**

Prior to 2002, we did not track costs on a per project basis, and therefore have estimated the allocation of our total research and development costs to our largest research and development programs. During 2007, these research and development programs consisted largely of Oncophage, AG-707, Aroplatin, and QS-21, as indicated in the following table (in thousands).

| Research and Development Program            | Product            | Year Ended December 31, |           |           | Prior to 2005 | Total      |
|---------------------------------------------|--------------------|-------------------------|-----------|-----------|---------------|------------|
|                                             |                    | 2007                    | 2006      | 2005      |               |            |
| Heat shock proteins for cancer              | Oncophage & AG-858 | \$ 13,970               | \$ 19,985 | \$ 37,836 | \$ 166,635    | \$ 238,426 |
| Heat shock proteins for infectious diseases | AG-702/707         | 2,005                   | 1,939     | 3,001     | 9,126         | 16,071     |
| Liposomal cancer treatments*                | Aroplatin          | 3,005                   | 2,475     | 3,214     | 5,878         | 14,572     |
| Vaccine adjuvant**                          | QS-21              | 2,064                   | 2,492     | 325       | 4,619         | 9,500      |
| Other research and development programs     |                    | 745                     | 1,752     | 2,704     | 11,922        | 17,123     |
| Total research and development expenses     |                    | \$ 21,789               | \$ 28,643 | \$ 47,080 | \$ 198,180    | \$ 295,692 |

\* Prior to 2001, costs were incurred by Aronex Pharmaceuticals, Inc., a company we acquired in July 2001.

\*\* Prior to 2000, costs were incurred by Aquila Biopharmaceuticals, Inc., a company we acquired in November 2000.

Research and development program costs include compensation and other direct costs plus an allocation of indirect costs, based on certain assumptions and our review of the status of each program. Our product candidates are in various stages of development as described below. Significant additional expenditures will be required if we start new trials, encounter delays in our trials, apply for regulatory approvals, continue development of our technologies, expand our operations, and bring our product candidates to market. The eventual total cost of each clinical trial is dependent on a number of uncertainties such as trial design, length of the trial, number of clinical sites, and number of patients. The process of obtaining and maintaining regulatory approvals for new therapeutic products is lengthy, expensive, and uncertain. Because the development of our most advanced product candidate, Oncophage, is subject to further evaluation and uncertainty, and because AG-707 and Aroplatin are in early-stage clinical development, we are unable to reliably estimate the cost of completing our research and development programs, the timing of bringing such programs to market, and, therefore, when, if ever, material cash inflows are likely to commence. Our collaborations involving QS-21 depend on our collaborative partners or licensees successfully completing clinical trials, our, or our collaborative partners or licensees, successfully supplying QS-21 to meet demand, and our collaborative partners or licensees obtaining regulatory approvals and successfully commercializing product candidates containing QS-21.

**Product Development Portfolio***Oncophage*

We started enrolling patients in our first clinical trial studying Oncophage in November 1997. To date, we have treated over 750 cancer patients with Oncophage in our clinical trials. Because Oncophage is a novel therapeutic cancer vaccine that is patient-specific, meaning it is derived from the patient's own tumor, it may experience a long regulatory review process and high development costs, either of which could delay or prevent our commercialization efforts. For additional information regarding regulatory risks and uncertainties, please read the risks identified under Item 1A. Risk Factors of this Annual Report on Form 10-K.

## **Table of Contents**

On March 24, 2006, we announced top-line results from part I of our Phase 3 study of Oncophage in renal cell carcinoma patients who are at high risk of recurrence after surgery, and disclosed that the trial did not meet its primary endpoint. We also announced the termination of part II of the trial. The analysis was triggered based on the number of events (defined as recurrence of disease or death of a patient prior to recurrence) reported by study investigators. However, an independent review by the trial's Clinical Events Committee revealed that substantially fewer events had actually occurred. The analysis showed a trend in favor of Oncophage for recurrence-free survival (RFS, the study's primary endpoint), and a trend against Oncophage for OS (a secondary endpoint); however neither finding was statistically significant. The analysis of the OS endpoint was considered an interim assessment. It was unclear why opposing trends were observed between RFS and OS at that time. Importantly, there was no readily apparent adverse safety signal associated with the vaccine that we believe contributed to this finding.

We conducted an in-depth analysis of data from part I of our Phase 3 study of Oncophage in renal cell carcinoma during April and May 2006 and discussed the results with the FDA and a panel of experts in this medical field. On June 7, 2006, we announced the findings of the analysis. With regard to the primary endpoint, RFS, the analysis showed that there was no statistically significant difference between the two arms in the intent-to-treat population of 728 patients. However, analysis of RFS in a subgroup of better-prognosis patients randomized in the trial who were at intermediate risk of recurrence showed significant improvement (nominal, two-sided *P* value of 0.018 and hazard ratio of 0.567) in favor of the Oncophage arm. The subgroup consisted of 361 patients, or 60% of the 604 patients in the full analysis set (FAS) population. As defined by FDA-issued guidance, the FAS is the set of subjects that is as close as possible to the ideal implied by the intention-to-treat principle. It is derived from the set of all randomized subjects by minimal and justified elimination of subjects. In this case, patients with baseline disease, who were not eligible for the trial per protocol, were excluded from the FAS population. In this 361-patient subgroup, patients receiving Oncophage had a 44% decreased risk of recurrence compared with patients in the observation arm.

We continued to collect data per the protocol through March 2007, and on May 21, 2007 we announced additional follow-up data. The end-of-study results, which reflected an additional 17 months' data collection, showed that in the intent-to-treat population, no statistically significant difference was found between the two arms. In the subset of better-prognosis patients (*n* = 362) at intermediate risk for disease recurrence, patients in the Oncophage arm continued to demonstrate significant improvement in RFS of approximately 45 percent (*P* value of less than 0.01 and hazard ratio of 0.55). In addition, updated analysis in this group of intermediate risk patients revealed a trend toward improved OS, the study's secondary endpoint. The positive OS trend observed appeared to correlate with the RFS improvement demonstrated in previous analyses. The results announced in June 2006 reported that a total of 361 patients in the subgroup were defined as having intermediate risk for recurrence of disease. In subsequent follow-up, one patient was recategorized, resulting in an increase in the total number of patients from 361 to 362 in the later analysis.

The Eastern Cooperative Oncology Group is currently sponsoring a large adjuvant renal cell carcinoma trial that stratifies patients by certain prognostic risk factors for recurrence, and puts patients into intermediate risk, high risk, and very high risk categories. We are able to apply these definitions to the data generated as part of our Phase 3 trial of Oncophage in renal cell carcinoma and it is in the intermediate risk, or better prognosis population, where significant improvement over observations is demonstrated.

We continue to analyze the data collected to date, and we have opened a subsequent protocol that will continue to follow patients in the format of a registry in order to collect OS information, as well as investigator reports of disease recurrence. The registry, which is expected to provide additional data on the effectiveness of Oncophage, will follow patients for an additional three years from closure of the initial trial, providing more than five years of data collection following the enrollment of the last patient in the trial. In addition to the patient registry, we intend to initiate a small study in non-metastatic renal cell carcinoma that measures immunological data in the intermediate-risk patient population. This continued data collection and our ongoing analysis is uncertain, and may negatively affect or not affect the acceptability of the overall results of the trial, and even if

## **Table of Contents**

clinically meaningful, may not meet the requirements of the FDA or other regulatory authorities for submission and approval of a marketing application or similar ex-U.S. applications for product approval.

Guidance received from past discussions with the FDA indicates that further clinical studies must be conducted to demonstrate to them the efficacy and safety of Oncophage. At the appropriate time, we intend to seek a meeting with the FDA to discuss the results of the updated analyses utilizing data through March 2007 to determine whether there is an opportunity to file a BLA on the basis of these results with appropriate commitments to conduct further clinical investigations to support the efficacy of Oncophage in renal cell carcinoma. Because evidence of clinically significant improvement has been observed in a subgroup analysis and was not demonstrated in the pre-specified analysis of the primary and secondary endpoints of the Phase 3 study of Oncophage in renal cell carcinoma, this trial is likely not sufficient to support a BLA for product approval, based on existing standards. Furthermore, this trial may not be sufficient to support approval outside of the U.S.

We are exploring the steps necessary to seek approval of Oncophage in ex-U.S. markets. This exploration process includes, but is not limited to, formal and informal discussions with international regulatory authorities, key opinion leaders, and consultants with country-specific regulatory experience regarding potential applications for full or conditional marketing approvals and/or named patient programs. In conjunction with this process, on June 25, 2007, we completed the submission of an application for marketing authorization with the Russian Ministry of Public Health for the use of Oncophage in the treatment of kidney cancer patients at intermediate risk for disease recurrence. We expect to know the outcome of this application during the first half of 2008.

We are in the process of preparing to file a marketing authorization application in Europe for conditional authorization of Oncophage as an adjuvant treatment for kidney cancer patients. Conditional authorization, a relatively new provision, would allow for commercialization of a product with post approval commitments that include annual regulatory evaluation until those commitments are fulfilled. We intend to file the application in the second half of 2008. Preparations associated with filing a marketing application require a multitude of activities, including opening a dialogue with the relevant regulatory agency. Based on these on-going discussions, decisions regarding the intended date of a filing and/or the decision to file at all can be influenced or changed at any time.

During the quarter ended September 30, 2004, we completed enrollment of our Phase 3 trial in metastatic melanoma. Our overall manufacturing success rate for this trial was approximately 70%, and as a result during 2004 we indicated that we did not believe this trial would qualify as registrational. In October 2005, we announced preliminary survival data from this trial, and updated findings were presented on June 5, 2006 at the 39th annual meeting of the American Society of Clinical Oncology. Overall, patients in the intent-to-treat Oncophage arm (M1a, b, and c combined categories as defined by the American Joint Committee on Cancer) fared similarly to those in the physician's choice arm in terms of survival, the primary endpoint. Landmark analyses were utilized to aid in exploring dose response (the landmark was set at day-150, which means that a patient had to survive at least 150 days in both arms to be considered for the analysis). The day 150 landmark represents the average time it would take for a patient to receive 10 injections of Oncophage. Using this analysis approach, it was observed that overall median survival time for a subgroup of patients who received at least 10 injections of Oncophage increased by approximately 29% in the Oncophage-treated arm as compared with those in the physician's choice treatment arm (16.5 months versus 12.8 months). These findings also noted that in a subgroup of randomized stage IV M1a and M1b combined patients who received at least 10 doses of Oncophage vaccine, median survival time increased by approximately 143% in the Oncophage-treated arm compared with those in the physician's choice treatment arm (31.2 months versus 12.8 months; nominal, one-sided *P* value of 0.017 and hazard ratio of 0.452). This analysis was not pre-specified. The physician's choice treatment arm included the current array of therapies such as chemotherapeutics, biological agents, and/or surgery. This OS analysis of the primary endpoint on an intent-to-treat basis was not statistically significant. These Phase 3 metastatic melanoma trial results were published in the February 20, 2008 issue of the *Journal of Clinical Oncology*. No additional studies in metastatic melanoma are planned at this time.

## **Table of Contents**

### *AG-707*

The first potential off-the-shelf application of our heat shock protein technology, AG-707, is an investigational therapeutic vaccine product candidate directed at the virus that causes genital herpes (herpes simplex virus-2 ( HSV-2 )). AG-707 is a multivalent vaccine containing multiple synthetic HSV-2 peptides. Based on the results of completed toxicology studies and other preclinical activities, we submitted to the FDA an IND for AG-707 during the second quarter of 2005 and in October 2005, initiated a Phase 1 clinical trial of AG-707. We are currently evaluating immune responses in patients who have been treated. We expect this patient evaluation will be completed during 2008.

### *Aroplatin*

Aroplatin is a novel liposomal formulation of a third-generation platinum chemotherapeutic structurally similar to Eloxatin (oxaliplatin; Sanofi Aventis), a treatment for colorectal cancer. In October 2005, we initiated a Phase 1, dose-escalation trial of Aroplatin in solid malignancies and NHL. This study is currently enrolling patients. We hope to reach the maximum tolerated dose in this study in 2008.

### *QS-21*

QS-21 is an adjuvant, or a substance added to vaccines and other immunotherapies, that is designed to enhance the body's immune response to the antigen contained within the treatment. QS-21 is best known for its ability to stimulate antibody, or humoral, immune response, and has also been shown to activate cellular immunity. A natural product, QS-21 is a triterpene glycoside, or saponin, a natural compound purified from the bark of a South American tree called *Quillaja saponaria*. It is sufficiently characterized with a known molecular structure, thus distinguishing it from other adjuvant candidates, which are typically emulsions, polymers or biologicals.

QS-21 has been tested in approximately 175 clinical trials involving, in the aggregate, over 9,000 subjects in a variety of cancer indications, infectious diseases, and other disorders. These studies have been carried out by academic institutions predominantly located in the United States and by pharmaceutical companies at more than 20 international sites. A number of these studies have shown QS-21 to be significantly more effective in stimulating antibody responses than aluminum hydroxide or aluminum phosphate, the adjuvants most commonly used in approved vaccines in the United States today. None of these QS-21 trials performed to date have been pivotal.

On July 20, 2007, we executed a letter agreement with GSK amending the GSK supply agreement to accelerate GSK's commercial grade QS-21 manufacturing rights previously granted in July 2006. Accordingly, from the effective date of the letter, GSK has the right to manufacture all of its requirements of commercial grade QS-21. In addition, the parties have amended their purchase and supply obligations with respect to pre-commercial grade QS-21. Also, in accordance with the terms of the letter, upon our election, GSK is obligated to supply us (or our affiliates, licensees, or customers) certain quantities of commercial grade QS-21 for a stated period of time.

We understand that QS-21 is a key component included in several of GSK's proprietary adjuvant systems and that a number of GSK's vaccine candidates currently under development are formulated using adjuvant systems containing QS-21. GSK has initiated a Phase 3 study evaluating its investigational MAGE-A3 Antigen-Specific Cancer Immunotherapeutic containing QS-21 in non-small cell lung cancer. GSK has also released data from a Phase 2 study of its malaria vaccine candidate in African infants. GSK has indicated that it intends to proceed into late stage trials of what could be the first malaria vaccine for infants and young children in Africa.

Elan Corporation, plc, through its affiliate Elan Pharmaceuticals International Limited, has initiated a Phase 2 study of their Alzheimer's disease product candidate that contains QS-21 and Acambis plc has completed a Phase 1 clinical study of its M2e-based universal flu vaccine containing QS-21. Based on results of the clinical study, Acambis exercised its option for a commercial license to QS-21.

## **Table of Contents**

### **Liquidity and Capital Resources**

We have incurred annual operating losses since inception, and we had an accumulated deficit of \$498.6 million as of December 31, 2007. We expect to incur significant losses over the next several years as we continue our clinical trials, apply for regulatory approvals, prepare for commercialization, continue development of our technologies, and expand our operations. Phase 3 trials are particularly expensive to conduct. Since our inception, we have financed our operations primarily through the sale of equity and convertible notes, interest income earned on cash, cash equivalents, and short-term investment balances, and debt provided through secured lines of credit. From our inception through December 31, 2007, we have raised aggregate net proceeds of \$429.2 million through the sale of common and preferred stock, the exercise of stock options and warrants, proceeds from our employee stock purchase plan, and the issuance of convertible notes, and borrowed \$20.5 million under two credit facilities. As of December 31, 2007, we had debt outstanding of \$77.5 million, including \$27.4 million of 2006 Notes maturing August 30, 2011 and \$50.0 million of 5.25% convertible senior notes maturing February 20, 2025.

In June 2005, we took steps to improve our operating efficiency through the prioritization of our development portfolio and a streamlining of our infrastructure. During December 2005, we implemented a series of actions to reduce our net cash burn (cash used in operating activities plus capital expenditures, debt repayments, and dividend payments), and preserve our cash. These actions included various cost saving activities, and a focusing and streamlining of our research and development activities. In April 2006, we expanded our restructuring plan to further conserve funds. This additional restructuring involved the temporary discontinuance and/or conclusion of late-stage clinical programs and concentrating on Phase 1 and preclinical programs, including Aroplatin, AG-707, and AU-801 (in September 2006, we discontinued activities related to AU-801). These actions resulted in a combined total headcount reduction of 133 positions. As a result of these actions and based on our current plans and activities, we anticipate that our net cash burn will be in the range of \$30 million to \$35 million for the year ending December 31, 2008. We continue to support and develop our QS-21 partnering collaborations, with the goal of generating royalties from this product in the 2010 timeframe.

We believe, based on our current plans and activities, that our working capital resources at December 31, 2007, along with the proceeds from our financing completed in January 2008, and the estimated proceeds from our license, supply, and collaborative agreements, will be sufficient to satisfy our liquidity requirements into 2009. However, we plan to attempt to raise additional funds prior to that time. In order to fund our operations through 2009 and beyond, we will need to raise additional funds and may attempt to do so by: (1) licensing technologies or products to one or more collaborative partners, (2) renegotiating license agreements with current collaborative partners, (3) completing an outright sale of assets, (4) securing additional debt financing, and/or (5) selling additional equity securities. Our ability to successfully enter into any such arrangements is uncertain, and if funds are not available, or not available on terms acceptable to us, we may be required to revise our planned clinical trials, other development activities, capital expenditures, and/or the scale of our operations. As noted above, we expect to attempt to raise additional funds in advance of depleting our current funds; however, we may not be able to raise funds or raise amounts sufficient to meet the long-term needs of the business. Satisfying long-term liquidity needs may require the successful commercialization of product candidates and will require additional capital as discussed above. Please see the Forward-Looking Statements section and the risks highlighted under Item 1A. Risk Factors of this Annual Report on Form 10-K.

Our future cash requirements include, but are not limited to, efforts to commercialize Oncophage in Russia and other jurisdictions we are currently exploring, as well as supporting our clinical trial and regulatory efforts and continuing our other research and development programs. Since inception, we have entered into various agreements with institutions and clinical research organizations to conduct and monitor our current clinical studies. Under these agreements, subject to the enrollment of patients and performance by the applicable institution of certain services, we have estimated our payments to be \$47.9 million over the term of the studies. Through December 31, 2007, we have expensed \$45.8 million as research and development expenses and \$44.9 million has been paid related to these clinical studies. The timing of expense recognition and future payments related to these agreements is subject to the enrollment of patients and performance by the applicable institution of certain services.

## **Table of Contents**

We have also entered into sponsored research agreements related to our product candidates that required payments of \$6.5 million, all of which has been paid through December 31, 2007. We plan to enter into additional agreements, and we anticipate significant additional expenditures will be required to advance our clinical trials, apply for regulatory approvals, continue development of our technologies, and bring our product candidates to market. Part of our strategy is to develop and commercialize some of our product candidates by continuing our existing collaborative arrangements with academic and collaborative partners and licensees and by entering into new collaborations. As a result of our collaborative agreements, we will not completely control the efforts to attempt to bring those product candidates to market. We have various agreements, for example, with collaborative partners and/or licensees, which allow the use of our QS-21 adjuvant in numerous vaccines. These agreements grant exclusive worldwide rights in some fields of use and co-exclusive or non-exclusive rights in others. These agreements generally provide us with rights to manufacture and supply QS-21 to the collaborative partner or licensee and also call for royalties to be paid to us on future sales of licensed vaccines that include QS-21, which may or may not be achieved. Significant investment in manufacturing capacity would be required if we were to retain our manufacturing and supply rights.

Our cash, cash equivalents, and short-term investments at December 31, 2007 were \$18.7 million, a decrease of \$21.4 million from December 31, 2006. In February 2007, we achieved a milestone related to the transfer of manufacturing technologies to GSK and received a payment of \$2.0 million. In the third quarter of 2007, we received an additional \$2.0 million payment from GSK pursuant to a letter executed in July 2007. This initial payment, as well as additional payments totaling \$5.25 million through December 2012, is consideration for our acceleration of GSK's QS-21 manufacturing rights previously granted in July 2006. Except as expressly provided in the letter, all other financial obligations of GSK under the GSK supply agreement, including royalty payments, remain unchanged. The letter does not affect the rights and obligations of the parties under the July 6, 2006 GSK license agreement. We also received \$1.1 million in other milestone payments related to QS-21 in the third quarter of 2007.

During the year ended December 31, 2007, we used cash primarily to finance our operations. Net cash used in operating activities for the years ended December 31, 2007 and 2006 was \$26.7 million and \$44.9 million, respectively. The decrease resulted primarily from our restructuring activities, as described above. We continue to support and develop our QS-21 partnering collaborations, with the goal of generating royalties from this product in the 2010 timeframe. Our future ability to generate cash from operations will depend on achieving regulatory approval of our product candidates, market acceptance of such product candidates, achieving benchmarks as defined in existing collaborative agreements, and our ability to enter into new collaborations. Please see the Forward-Looking Statements section and the risks highlighted under Item 1A. Risk Factors of this Annual Report on Form 10-K.

Net cash provided by investing activities for the year ended December 31, 2007 was \$13.2 million as compared to \$15.4 million for the year ended December 31, 2006. During the year ended December 31, 2007, we had net proceeds of \$11.7 million from short-term investments compared with \$13.0 million during the year ended December 31, 2006. We received \$3.0 million during the year ended December 31, 2006 from the release of restrictions on our remaining restricted cash balance.

During December 2006, we entered into a formal plan to sell our limited partner interest in Applied Genomic Technology Capital Fund ( AGTC ), identified potential buyers, and received offers. On January 9, 2007, we contributed the final capital call of \$165,000 to AGTC and on February 2, 2007, we completed the sale of our limited partner interest in AGTC to an accredited investor and received \$1.7 million. We made a capital contribution of \$285,000 to AGTC during the year ended December 31, 2006.

Net cash provided by financing activities was \$3.8 million for the year ended December 31, 2007 as compared to \$20.6 million for the year ended December 31, 2006. During the year ended December 31, 2006, exercises of stock options totaled \$272,000. No options were exercised during the year ended December 31, 2007. During the years ended December 31, 2007 and 2006, proceeds from our employee stock purchase plan

## Table of Contents

totaled \$78,000 and \$197,000, respectively. Dividends paid on our series A convertible preferred stock totaled \$791,000 during both periods. Long-term debt of \$4.0 million was repaid during the year ended December 31, 2006. There were no repayments of long-term debt during the year ended December 31, 2007. In connection with a future financing, we paid offering costs of \$202,000 that were deferred and included on our consolidated balance sheet at December 31, 2007 in other long-term assets.

On October 30, 2006, we issued \$25.0 million of our 2006 Notes to a group of accredited investors. These 2006 Notes are convertible into our common stock at an initial fixed conversion price of \$3.50 per share at the option of the investors. Alternatively, the 2006 Notes can be converted into an interest in a wholly-owned subsidiary that holds the rights or patents to QS-21 and AG-707. The 2006 Notes bear interest at 8% (an effective rate of 8.10%) payable semiannually on December 30 and June 30 in cash or, at our option, in additional notes or a combination thereof and mature on August 30, 2011. During the year ended December 31, 2007, we paid \$50,000 of debt issuance costs related to the issuance of the 2006 Notes. During the year ended December 31, 2007, \$2.1 million in interest payments that came due on the 2006 Notes were paid in additional notes.

On September 10, 2007, we issued 1,623,377 shares of our common stock at a price of \$3.08 per share to a single institutional investor. Net proceeds, after deducting offering expenses paid by us of \$259,000, were \$4.7 million. In conjunction with this transaction, we also issued to the investor 10,000 shares of our new series B1 convertible preferred stock and 5,250 shares of our new series B2 convertible preferred stock (collectively, our class B convertible preferred stock). Shares of the series B1 convertible preferred stock permit the investor, within one year of the anniversary of closing, to purchase up to an additional \$10.0 million of common shares at a purchase price equal to the lesser of \$3.08 per share or a price calculated based on the then-prevailing price of our common stock minus \$0.30 per share. Shares of the series B2 convertible preferred stock permit the investor to purchase common shares for consideration of up to 35 percent of the total dollar amount previously invested pursuant to the agreement with the investor, including conversions of the series B1 convertible preferred stock, at a purchase price equal to the lesser of \$4.16 per common share or a price calculated based on the then-prevailing price of our common stock, and such right expires seven years from the date of issuance. The total number of shares of common stock issued or issuable to the holder of the class B convertible preferred stock cannot exceed 19.9% of our outstanding common stock. No dividends are paid on the class B convertible preferred stock and there are no liquidation preferences.

On January 9, 2008, we entered into a private placement agreement that included (i) 8,708,717 shares of common stock, (ii) warrants to acquire up to 8,708,717 shares of common stock at \$3.00 per share, and (iii) unit warrants, which, if exercisable due to a Triggering Event as that term is defined in the applicable warrant, permit a holder to acquire up to 8,708,717 shares of common stock at \$3.00 per share and warrants to acquire up to an additional 8,708,717 shares of common stock at \$3.00 per share. We raised net proceeds in the private placement of \$25.8 million, after deducting offering costs of \$296,000. The net proceeds have been invested in short-term money market funds.

The table below summarizes our contractual obligations as of December 31, 2007 (in thousands).

|                    | Total      | Payments Due by Period |              |              |                      |
|--------------------|------------|------------------------|--------------|--------------|----------------------|
|                    |            | Less than<br>1 Year    | 1<br>3 Years | 3<br>5 Years | More than<br>5 Years |
| Long-term debt (1) | \$ 98,553  | \$ 2,827               | \$ 5,250     | \$ 90,476    | \$                   |
| Operating leases   | 14,846     | 3,053                  | 6,023        | 4,364        | 1,406                |
| Total              | \$ 113,399 | \$ 5,880               | \$ 11,273    | \$ 94,840    | \$ 1,406             |

- (1) Assumes the 2006 Notes are not converted and are paid in 2011. In certain circumstances, they could be called or converted before then. Also includes fixed interest payments and assumes that the convertible senior notes issued on January 25, 2005 are not converted and are paid on February 1, 2012. In certain circumstances, they could be converted before then. In addition, the note holders can require us to purchase



## **Table of Contents**

debt from them at certain dates between 2012 and 2020. If the convertible senior notes are not converted and we are not required to purchase the debt, it matures on February 1, 2025. If the debt were outstanding until maturity, there would be additional interest payments of \$34.1 million for the period 2012 through 2025.

Effective July 19, 2002, we sublet part of our Framingham manufacturing, research and development, and office space to GTC Biotherapeutics, Inc. ( "GTC" ), and we have leased related leasehold improvements and equipment under agreements that were to expire on December 31, 2006. GTC exercised its option to extend this lease until September 2010. Under the terms of our original lease, we are obligated to pay our landlord approximately 7% of our rental income. Effective March 17, 2004, we sublet an additional part of our Framingham manufacturing, research and development, and office space to PP Manufacturing, whose lease also expires in September 2010. We are contractually entitled to receive base rental payments of \$1.2 million in 2008, \$1.2 million in 2009, and \$863,000 in 2010. The collection of this income, however, is subject to uncertainty.

We are currently involved in certain legal proceedings as detailed in Item 3 above and Note 15 of the notes to our consolidated financial statements. While we currently believe that the ultimate outcome of any of these proceedings will not have a material adverse effect on our financial position, results of operations, or liquidity, litigation is subject to inherent uncertainty. Furthermore, litigation consumes both cash and management attention.

### **Inflation**

We believe that inflation has not had a material adverse effect on our business, results of operations, or financial condition to date.

### **Related Parties**

As of December 31, 2006, we had invested \$2.8 million in a limited partnership, AGTC. Our total capital commitment to AGTC was \$3.0 million. The management company for AGTC is NewcoGen Group Inc., which is a wholly-owned subsidiary of Flagship Venture Management, Inc. ( "Flagship" ). Noubar Afeyan, Ph.D., who was a member of our Board of Directors, is the Managing Partner and Chief Executive Officer of Flagship. For additional details, refer to Note 4 of the notes to our consolidated financial statements. Garo H. Armen, Ph.D., our Chairman and Chief Executive Officer, was a director of NewcoGen Group Inc. until 2004. During December 2006, we entered into a formal plan to sell our limited partner interest in AGTC, identified potential buyers, and received offers. On January 9, 2007, we contributed the final capital call of \$165,000 to AGTC and on February 2, 2007, we completed the sale of our limited partner interest in AGTC to an accredited investor and received \$1.7 million.

In March 1995, we entered into a consulting agreement with Dr. Pramod Srivastava, our scientific founder and a former member of our Board of Directors, and upon its expiration in March 2006, we entered into a new consulting agreement (the "Agreement" ), effective March 28, 2006, with Dr. Srivastava. The Agreement has an initial term ending March 31, 2010. However, the parties are in discussions regarding potential early termination. In exchange for the timely performance of services, as defined in the Agreement, Dr. Srivastava is entitled to receive compensation to be established by the Compensation Committee of the Antigenics Board of Directors. For the twelve-month period ending March 31, 2008, Dr. Srivastava will receive \$50,000. Dr. Srivastava is also eligible to receive an annual bonus and stock options at the discretion of the Compensation Committee of our Board of Directors.

In February 1998, we entered into a research agreement with the University of Connecticut Health Center ( "UConn" ) to fund research in Dr. Srivastava's laboratory at UConn. Dr. Srivastava is a member of the faculty of the University of Connecticut School of Medicine. Effective December 31, 2006, this agreement was terminated, and a termination fee of \$250,000 was paid to UConn in January 2007. The termination of this agreement did not affect our existing license rights under our license agreement with UConn.

## **Table of Contents**

On January 9, 2008, we entered into a private placement agreement that included (i) 8,708,717 shares of common stock, (ii) warrants to acquire up to 8,708,717 shares of common stock at \$3.00 per share, and (iii) unit warrants, which, if exercisable due to a Triggering Event as that term is defined in the applicable warrant, permit a holder to acquire up to 8,708,717 shares of common stock at \$3.00 per share and warrants to acquire up to an additional 8,708,717 shares of common stock at \$3.00 per share. In conjunction with this private placement, we sold 542,050 shares of common stock to Garo H. Armen, Ph.D., our Chairman and Chief Executive Officer, and 1,166,667 shares of common stock to Armen Partners LP. Garo H. Armen is the general partner of Armen Partners LP and owns a controlling interest therein. In addition to the common stock acquired by Garo H. Armen and Armen Partners LP, each acquired an equal number of both warrants and unit warrants.

### **Critical Accounting Policies and Estimates**

The Securities and Exchange Commission ( SEC ) defines critical accounting policies as those that require the application of management's most difficult, subjective, or complex judgments, often as a result of the need to make estimates about the effect of matters that are inherently uncertain and may change in subsequent periods.

The preparation of consolidated financial statements in conformity with U.S. generally accepted accounting principles requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. We base those estimates on historical experience and on various assumptions that are believed to be reasonable under the circumstances. Actual results could differ from those estimates.

The following listing is not intended to be a comprehensive list of all of our accounting policies. Our significant accounting policies are described in Note 2 of the notes to our consolidated financial statements. In many cases, the accounting treatment of a particular transaction is dictated by U.S. generally accepted accounting principles, with no need for our judgment in its application. There are also areas in which our judgment in selecting an available alternative would not produce a materially different result. We have identified the following as our critical accounting policies.

#### ***Revenue Recognition***

Revenue for services under research and development contracts are recognized as the services are performed, or as clinical trial materials are provided. Non-refundable milestone payments that represent the completion of a separate earnings process are recognized as revenue when earned. License fees and royalties are recognized as they are earned. Revenue recognized from collaborative agreements is based upon the provisions of SEC Staff Accounting Bulletin ( SAB ) No. 104, *Revenue Recognition*, and Emerging Issues Task Force ( EITF ) Issue No. 00-21, *Revenue Arrangements with Multiple Deliverables*.

#### ***Share-Based Compensation***

In accordance with the fair value recognition provisions of SFAS No. 123R, we recognize stock-based compensation expense net of an estimated forfeiture rate and only recognize compensation expense for those shares expected to vest. Compensation expense is recognized on a straight-line basis over the requisite service period of the award.

Stock options granted to certain non-employees have been accounted for based on the fair value method of accounting in accordance with SFAS No. 123R and EITF Issue No. 96-18, *Accounting for Equity Instruments That Are Issued to Other Than Employees for Acquiring, or in Conjunction with Selling, Goods or Services*. As a result, the non-cash charge to operations for non-employee options with vesting or other performance criteria is affected each reporting period, until the non-employee options vest, by changes in the fair value of our common

## **Table of Contents**

stock. Effective January 1, 2006, under the provisions of EITF Issue No. 00-19, *Accounting for Derivative Financial Instruments Indexed to, and Potentially Settled in, a Company's Own Stock*, the change in fair value of vested options issued to non-employees also affects each reporting period, until the options are exercised or expire.

Determining the appropriate fair value model and calculating the fair value of share-based payment awards requires the use of highly subjective assumptions, including the expected life of the share-based payment awards and stock price volatility. The assumptions used in calculating the fair value of share-based payment awards represent management's best estimates, but these estimates involve inherent uncertainties and the application of management judgment. As a result, if factors change and we use different assumptions, our stock-based compensation expense could be materially different in the future. In addition, if our actual forfeiture rate is materially different from our estimate, the stock-based compensation expense could be significantly different from what we have recorded in the current period. See Note 10 of the notes to our consolidated financial statements for a further discussion on stock-based compensation.

### **Recent Accounting Pronouncements**

On January 1, 2007, we adopted Financial Accounting Standards Board ( FASB ) Interpretation No. 48, *Accounting for Uncertainty in Income Taxes* ( FIN 48 ), which is intended to clarify the accounting for income taxes by prescribing a minimum recognition threshold for a tax position before being recognized in the financial statements. FIN 48 also provides guidance on measurement, derecognition, classification, interest and penalties, accounting in interim periods, disclosure, and transition. At the adoption of FIN 48 and as of December 31, 2007, total uncertain tax positions were immaterial and accordingly, no adjustments to the consolidated financial statements were required. We do not anticipate any material changes in the amount of unrecognized tax positions over the next twelve months.

In September 2006, the FASB issued SFAS No. 157, *Fair Value Measurements* ( SFAS No. 157 ). SFAS No. 157 establishes a framework for measuring fair value and expands disclosures about fair value measurements. SFAS No. 157 became effective for our financial assets and liabilities on January 1, 2008. On February 12, 2008, the FASB issued FASB Staff Position ( FSP ) No. FAS 157-2, *Effective Date of FASB Statement No. 157* ( FSP FAS No. 157-2 ) to provide a partial deferral of SFAS No. 157. FSP FAS No. 157-2 defers the effective date of SFAS No. 157 for all nonfinancial assets and liabilities, excluding those recognized or disclosed at fair value in an entity's financial statements on a recurring basis (at least annually), until fiscal years beginning after November 15, 2008. We are currently evaluating what effect, if any, the adoption of SFAS No. 157 will have on our results of operations and financial position.

In February 2007, the FASB issued SFAS No. 159, *The Fair Value Option for Financial Assets and Financial Liabilities* ( SFAS No. 159 ). SFAS No. 159 provides companies with the option to measure specified financial instruments and certain other items at fair value. We are required to adopt SFAS No. 159 as of January 1, 2008. We are currently evaluating what effect, if any, the adoption of SFAS No. 159 will have on our results of operations and financial position.

In December 2007, the FASB issued SFAS No. 141 (revised 2007), *Business Combinations* ( SFAS No. 141R ). This revised standard expands the types of transactions or other events that will qualify as business combinations and requires that all business combinations will result in all assets and liabilities of the acquired business being recorded at their fair values, with limited exceptions. The standard also requires, among other provisions, that certain contingent assets and liabilities will be recognized at their fair values on the acquisition date. An acquirer will also recognize contingent consideration at its fair value on the acquisition date and, for certain arrangements, changes in fair value will be recognized in earnings until the contingency is settled. Under SFAS No. 141R, acquisition-related transaction and restructuring costs will be expensed rather than treated as part of the cost of the acquisition and included in the amount recorded for assets acquired. SFAS No. 141R is

**Table of Contents**

required to be applied prospectively to business combinations for which the acquisition is on or after the beginning of the first annual reporting period beginning on or after December 15, 2008, and may not be early adopted.

In December 2007, the FASB also issued SFAS No. 160, *Noncontrolling Interests in Consolidated Financial Statements* ( SFAS No. 160 ). SFAS No. 160, which is effective for fiscal years, and interim periods within those fiscal years, beginning on or after December 15, 2008, governs the accounting for and reporting of noncontrolling interests in partially owned consolidated subsidiaries and the loss of control in subsidiaries. We do not expect that the adoption of SFAS No. 160 will have a material impact on our financial position or results of operations.

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

In the normal course of business, we are exposed to fluctuations in interest rates as we seek debt financing and invest excess cash. We are also exposed to foreign currency exchange rate fluctuation risk related to our transactions denominated in foreign currencies. We do not currently employ specific strategies, such as the use of derivative instruments or hedging, to manage these exposures. Our currency exposures vary, but are primarily concentrated in the Euro. During the year-ended December 31, 2007, there has been no material change with respect to our interest rate and foreign currency exposures or our approach toward those exposures. However, we are exploring possible commercialization of Oncophage outside of the U.S., which could result in increased foreign currency exposure.

The information below summarizes our market risks associated with debt obligations as of December 31, 2007. Fair value included herein has been estimated taking into consideration the nature and terms of each instrument and the prevailing economic and market conditions at December 31, 2007. The table presents principal payments by year of maturity based on the terms of the debt (in thousands).

|                    | Estimated<br>Fair Value (2) | Carrying Amount<br>December 31, 2007 | 2008   | Year of Maturity<br>2011 | 2012      |
|--------------------|-----------------------------|--------------------------------------|--------|--------------------------|-----------|
| Long-term debt (1) | \$ 60,435                   | \$ 77,547                            | \$ 146 | \$ 27,401                | \$ 50,000 |

- (1) Fixed interest rates range from 5.25% to 8%. The above table is based on the assumptions that future interest on the senior secured convertible notes issued on October 30, 2006 is paid in cash and that these notes are not converted at maturity (August 30, 2011). In certain circumstances, the notes could be called or converted before then. In addition, the table is based on the assumption that the convertible senior debt issued on January 25, 2005 is redeemed on February 1, 2012. In certain circumstances, it could be converted on or before February 1, 2012. In addition, the note holders of our convertible senior debt can require us to redeem debt at certain dates between 2012 and 2020. If the convertible senior debt is not converted and we are not required to purchase the debt, it matures on February 1, 2025.
- (2) The estimated fair value of our long-term debt was derived by evaluating the nature and terms of each note and considering the prevailing economic and market conditions at the balance sheet date. In addition, the fair value of our convertible senior notes issued on January 25, 2005 was estimated based on the most recently available trader quotes.

We had cash, cash equivalents, and short-term investments at December 31, 2007 of \$18.7 million, which are exposed to the impact of interest rate changes, and our interest income fluctuates as interest rates change. Due to the short-term nature of our investments in money market funds, our carrying value approximates the fair value of these investments at December 31, 2007, however, we are subject to investment risk.

We invest our cash, cash equivalents, and short-term investments in accordance with our Investment Policy. The primary objectives of our Investment Policy are to preserve principal, maintain proper liquidity to meet operating needs, and maximize yields. We review our Investment Policy annually and amend it as deemed necessary. Currently, the Investment Policy prohibits investing in any structured investment vehicles and asset-backed commercial paper. Although our investments are subject to credit risk, our Investment Policy specifies credit quality standards for our investments and limits the amount of credit exposure from any single issue, issuer, or type of investment. Our investments are also subject to interest rate risk and will decrease in value if market interest rates increase. However, due to the conservative nature of our investments and relatively short duration, interest rate risk is mitigated. We do not invest in derivative financial instruments. Accordingly, we do not believe that there is currently any material market risk exposure with respect to derivative or other financial instruments that would require disclosure under this item.

**Table of Contents**

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

**INDEX TO FINANCIAL STATEMENTS**

|                                                                                                                                              |    |
|----------------------------------------------------------------------------------------------------------------------------------------------|----|
| <u>Report of Independent Registered Public Accounting Firm</u>                                                                               | 64 |
| <u>Consolidated Balance Sheets as of December 31, 2007 and 2006</u>                                                                          | 65 |
| <u>Consolidated Statements of Operations for the years ended December 31, 2007, 2006 and 2005</u>                                            | 66 |
| <u>Consolidated Statements of Stockholders' (Deficit) Equity and Comprehensive Loss for the years ended December 31, 2007, 2006 and 2005</u> | 67 |
| <u>Consolidated Statements of Cash Flows for the years ended December 31, 2007, 2006 and 2005</u>                                            | 69 |
| <u>Notes to Consolidated Financial Statements</u>                                                                                            | 70 |

**Table of Contents**

**REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

The Board of Directors and Stockholders

Antigenics Inc.:

We have audited the accompanying consolidated balance sheets of Antigenics Inc. and subsidiaries as of December 31, 2007 and 2006, and the related consolidated statements of operations, stockholders' (deficit) equity and comprehensive loss, and cash flows for each of the years in the three-year period ended December 31, 2007. These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Antigenics Inc. and subsidiaries as of December 31, 2007 and 2006, and the results of their operations and their cash flows for each of the years in the three-year period ended December 31, 2007, in conformity with U.S. generally accepted accounting principles.

As discussed in Note 2(l) to the consolidated financial statements, the Company adopted the provisions of Statement of Financial Accounting Standards No. 123R, *Share-Based Payment*, effective January 1, 2006.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Antigenics Inc.'s internal control over financial reporting as of December 31, 2007, based on criteria established in *Internal Control – Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), and our report dated March 14, 2008 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

/s/ KPMG LLP

Boston, Massachusetts

March 14, 2008

**Table of Contents****ANTIGENICS INC. AND SUBSIDIARIES****CONSOLIDATED BALANCE SHEETS**

|                                                                                                                                                                                                                                                      | December 31, 2007 | December 31, 2006 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------|
| <b>ASSETS</b>                                                                                                                                                                                                                                        |                   |                   |
| Cash and cash equivalents                                                                                                                                                                                                                            | \$ 14,479,322     | \$ 24,218,683     |
| Short-term investments                                                                                                                                                                                                                               | 4,199,996         | 15,876,302        |
| Accounts receivable                                                                                                                                                                                                                                  | 318,707           | 182,493           |
| Inventories                                                                                                                                                                                                                                          | 510,872           | 438,644           |
| Prepaid expenses                                                                                                                                                                                                                                     | 837,075           | 1,307,648         |
| Other current assets                                                                                                                                                                                                                                 | 436,012           | 274,652           |
| Total current assets                                                                                                                                                                                                                                 | 20,781,984        | 42,298,422        |
| Plant and equipment, net of accumulated amortization and depreciation of \$22,628,352 and \$18,610,317 at December 31, 2007 and 2006, respectively                                                                                                   | 14,604,243        | 18,618,632        |
| Goodwill                                                                                                                                                                                                                                             | 2,572,203         | 2,572,203         |
| Core and developed technology, net of accumulated amortization of \$7,538,581 and \$6,431,318 at December 31, 2007 and 2006, respectively                                                                                                            | 3,534,048         | 4,641,311         |
| Debt issuance costs, net of accumulated amortization of \$762,820 and \$470,213 at December 31, 2007 and 2006, respectively                                                                                                                          | 1,380,963         | 1,623,570         |
| Other long-term assets                                                                                                                                                                                                                               | 1,663,401         | 3,197,403         |
| Total assets                                                                                                                                                                                                                                         | \$ 44,536,842     | \$ 72,951,541     |
| <b>LIABILITIES AND STOCKHOLDERS DEFICIT</b>                                                                                                                                                                                                          |                   |                   |
| Current portion, long-term debt                                                                                                                                                                                                                      | \$ 146,061        | \$ 146,061        |
| Current portion, deferred revenue                                                                                                                                                                                                                    | 1,413,255         |                   |
| Accounts payable                                                                                                                                                                                                                                     | 674,473           | 1,089,567         |
| Accrued liabilities                                                                                                                                                                                                                                  | 5,783,740         | 7,586,378         |
| Other current liabilities                                                                                                                                                                                                                            | 365,037           | 255,735           |
| Total current liabilities                                                                                                                                                                                                                            | 8,382,566         | 9,077,741         |
| Convertible senior notes                                                                                                                                                                                                                             | 77,400,533        | 75,333,333        |
| Deferred revenue                                                                                                                                                                                                                                     | 3,038,280         | 3,115,336         |
| Other long-term liabilities                                                                                                                                                                                                                          | 2,775,766         | 2,818,599         |
| Commitments and contingencies (Notes 13 and 15)                                                                                                                                                                                                      |                   |                   |
| <b>STOCKHOLDERS DEFICIT</b>                                                                                                                                                                                                                          |                   |                   |
| Preferred stock, par value \$0.01 per share; 25,000,000 shares authorized:                                                                                                                                                                           |                   |                   |
| Series A convertible preferred stock; 31,620 shares designated, issued, and outstanding at December 31, 2007 and 2006; liquidation value of \$31,817,625 at December 31, 2007                                                                        | 316               | 316               |
| Series B1 convertible preferred stock; 10,000 and 0 shares designated, issued, and outstanding at December 31, 2007 and 2006, respectively                                                                                                           | 100               |                   |
| Series B2 convertible preferred stock; 5,250 and 0 shares designated, issued, and outstanding at December 31, 2007 and 2006, respectively                                                                                                            | 53                |                   |
| Common stock, par value \$0.01 per share; 250,000,000 and 100,000,000 shares authorized at December 31, 2007 and 2006, respectively; 47,557,007 shares issued at December 31, 2007 and 45,843,751 shares issued and outstanding at December 31, 2006 | 475,570           | 458,438           |
| Additional paid-in capital                                                                                                                                                                                                                           | 451,114,779       | 444,013,527       |
| Treasury stock, at cost; 5,953 shares of common stock at December 31, 2007                                                                                                                                                                           | (12,168)          |                   |
| Accumulated other comprehensive loss                                                                                                                                                                                                                 |                   | (21,853)          |
| Accumulated deficit                                                                                                                                                                                                                                  | (498,638,953)     | (461,843,896)     |



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|                                             |               |               |
|---------------------------------------------|---------------|---------------|
| Total stockholders' deficit                 | (47,060,303)  | (17,393,468)  |
| Total liabilities and stockholders' deficit | \$ 44,536,842 | \$ 72,951,541 |

See accompanying notes to consolidated financial statements.

**Table of Contents****ANTIGENICS INC. AND SUBSIDIARIES****CONSOLIDATED STATEMENTS OF OPERATIONS****For the Years Ended December 31, 2007, 2006 and 2005**

|                                                                         | <b>2007</b>     | <b>2006</b>     | <b>2005</b>     |
|-------------------------------------------------------------------------|-----------------|-----------------|-----------------|
| Revenue                                                                 | \$ 5,552,307    | \$ 692,135      | \$ 629,978      |
| Operating expenses:                                                     |                 |                 |                 |
| Research and development                                                | (21,788,541)    | (28,643,510)    | (47,079,493)    |
| General and administrative                                              | (17,041,339)    | (21,287,599)    | (25,868,142)    |
| Restructuring costs                                                     |                 | (1,374,293)     | (1,596,200)     |
| Operating loss                                                          | (33,277,573)    | (50,613,267)    | (73,913,857)    |
| Other income (expense):                                                 |                 |                 |                 |
| Non-operating income                                                    | 611             | 141,329         | 1,000           |
| Interest expense                                                        | (4,985,162)     | (3,288,660)     | (2,963,496)     |
| Interest income                                                         | 1,467,067       | 1,880,049       | 2,772,799       |
| Net loss                                                                | (36,795,057)    | (51,880,549)    | (74,103,554)    |
| Dividends on series A convertible preferred stock                       | (790,500)       | (790,500)       | (790,500)       |
| Net loss attributable to common stockholders                            | \$ (37,585,557) | \$ (52,671,049) | \$ (74,894,054) |
| Per common share data, basic and diluted:                               |                 |                 |                 |
| Net loss attributable to common stockholders                            | \$ (0.81)       | \$ (1.15)       | \$ (1.64)       |
| Weighted average number of common shares outstanding, basic and diluted | 46,511,577      | 45,809,142      | 45,577,344      |

See accompanying notes to consolidated financial statements.

**Table of Contents****ANTIGENICS INC. AND SUBSIDIARIES****CONSOLIDATED STATEMENTS OF STOCKHOLDERS (DEFICIT) EQUITY AND COMPREHENSIVE LOSS****For the Years Ended December 31, 2007, 2006 and 2005**

|                                                                               | Series A<br>Convertible<br>Preferred Stock |              | Series B1<br>Convertible<br>Preferred Stock |              | Series B2<br>Convertible<br>Preferred Stock |              | Common Stock           |              | Additional         | Treasury            | Accumulated<br>Other<br>Comprehensive |                          |              |                  | Accumulated     | Total |
|-------------------------------------------------------------------------------|--------------------------------------------|--------------|---------------------------------------------|--------------|---------------------------------------------|--------------|------------------------|--------------|--------------------|---------------------|---------------------------------------|--------------------------|--------------|------------------|-----------------|-------|
|                                                                               | Number of<br>Shares                        | Par<br>Value | Number of<br>shares                         | Par<br>Value | Number of<br>shares                         | Par<br>Value | Number<br>of<br>Shares | Par<br>Value | Paid-In<br>Capital | Number of<br>shares | Amount                                | Deferred<br>Compensation | Loss         | Deficit          |                 |       |
| Balance at<br>January 1, 2005                                                 | 31,620                                     | \$ 316       |                                             | \$           |                                             | \$           | 45,536,012             | \$ 455,360   | 442,021,962        |                     | \$                                    | \$ (27,134)              | \$ (147,377) | \$ (335,859,793) | \$ 106,443,334  |       |
| Comprehensive<br>loss:                                                        |                                            |              |                                             |              |                                             |              |                        |              |                    |                     |                                       |                          |              |                  |                 |       |
| Net loss                                                                      |                                            |              |                                             |              |                                             |              |                        |              |                    |                     |                                       |                          |              | (74,103,554)     | (74,103,554)    |       |
| Unrealized gain<br>on marketable<br>securities, net                           |                                            |              |                                             |              |                                             |              |                        |              |                    |                     |                                       |                          | 59,274       |                  | 59,274          |       |
| Comprehensive<br>loss                                                         |                                            |              |                                             |              |                                             |              |                        |              |                    |                     |                                       |                          |              |                  | \$ (74,044,280) |       |
| Share-based<br>compensation                                                   |                                            |              |                                             |              |                                             |              |                        |              | (60,889)           |                     |                                       | 24,060                   |              |                  | (36,829)        |       |
| Employee<br>share purchases                                                   |                                            |              |                                             |              |                                             |              | 55,204                 | 552          | 326,744            |                     |                                       |                          |              |                  | 327,296         |       |
| Dividend on<br>series A<br>convertible<br>preferred stock<br>(\$25 per share) |                                            |              |                                             |              |                                             |              |                        |              | (790,500)          |                     |                                       |                          |              |                  | (790,500)       |       |
| Balance at<br>December 31,<br>2005                                            | 31,620                                     | 316          |                                             |              |                                             |              | 45,591,216             | 455,912      | 441,497,317        |                     |                                       | (3,074)                  | (88,103)     | (409,963,347)    | 31,899,021      |       |
| Comprehensive<br>loss:                                                        |                                            |              |                                             |              |                                             |              |                        |              |                    |                     |                                       |                          |              |                  |                 |       |
| Net loss                                                                      |                                            |              |                                             |              |                                             |              |                        |              |                    |                     |                                       |                          |              | (51,880,549)     | (51,880,549)    |       |
| Unrealized gain<br>on marketable<br>securities, net                           |                                            |              |                                             |              |                                             |              |                        |              |                    |                     |                                       |                          | 66,250       |                  | 66,250          |       |
| Comprehensive<br>loss                                                         |                                            |              |                                             |              |                                             |              |                        |              |                    |                     |                                       |                          |              |                  | \$ (51,814,299) |       |
| Share-based<br>compensation                                                   |                                            |              |                                             |              |                                             |              |                        |              | 4,568,473          |                     |                                       | 3,074                    |              |                  | 4,571,547       |       |
| Reclassification<br>of liability<br>classified<br>option grants               |                                            |              |                                             |              |                                             |              |                        |              | (1,728,537)        |                     |                                       |                          |              |                  | (1,728,537)     |       |
| Exercise of<br>stock options                                                  |                                            |              |                                             |              |                                             |              | 185,660                | 1,857        | 270,252            |                     |                                       |                          |              |                  | 272,109         |       |
| Employee<br>share purchases                                                   |                                            |              |                                             |              |                                             |              | 66,875                 | 669          | 196,522            |                     |                                       |                          |              |                  | 197,191         |       |
|                                                                               |                                            |              |                                             |              |                                             |              |                        |              | (790,500)          |                     |                                       |                          |              |                  | (790,500)       |       |

Dividend on  
series A  
convertible  
preferred stock  
(\$25 per share)

|                                    |        |     |            |         |             |          |               |              |
|------------------------------------|--------|-----|------------|---------|-------------|----------|---------------|--------------|
| Balance at<br>December 31,<br>2006 | 31,620 | 316 | 45,843,751 | 458,438 | 444,013,527 | (21,853) | (461,843,896) | (17,393,468) |
|------------------------------------|--------|-----|------------|---------|-------------|----------|---------------|--------------|

See accompanying notes to consolidated financial statements.

**Table of Contents****ANTIGENICS INC. AND SUBSIDIARIES****CONSOLIDATED STATEMENTS OF STOCKHOLDERS (DEFICIT) EQUITY AND COMPREHENSIVE LOSS (Continued)****For the Years Ended December 31, 2007, 2006 and 2005**

|                                                                   | Series A<br>Convertible<br>Preferred Stock |              | Series B1<br>Convertible<br>Preferred Stock |              | Series B2<br>Convertible<br>Preferred Stock |              | Common Stock           |              | Additional         | Treasury Stock      |             | Accumulated<br>Other<br>Comprehensive<br>Loss | Accumulated<br>Deficit | Total           |
|-------------------------------------------------------------------|--------------------------------------------|--------------|---------------------------------------------|--------------|---------------------------------------------|--------------|------------------------|--------------|--------------------|---------------------|-------------|-----------------------------------------------|------------------------|-----------------|
|                                                                   | Number of<br>Shares                        | Par<br>Value | Number of<br>shares                         | Par<br>Value | Number of<br>shares                         | Par<br>Value | Number<br>of<br>Shares | Par<br>Value | Paid-In<br>Capital | Number of<br>shares | Amount      | Deficit                                       | Deficit                |                 |
| Comprehensive loss:                                               |                                            |              |                                             |              |                                             |              |                        |              |                    |                     |             |                                               |                        |                 |
| Net loss                                                          |                                            |              |                                             |              |                                             |              |                        |              |                    |                     |             |                                               | (36,795,057)           | (36,795,057)    |
| Unrealized gain on marketable securities, net                     |                                            |              |                                             |              |                                             |              |                        |              |                    |                     |             | 21,853                                        |                        | 21,853          |
| Comprehensive loss                                                |                                            |              |                                             |              |                                             |              |                        |              |                    |                     |             |                                               |                        | \$ (36,773,204) |
| Share-based compensation                                          |                                            |              |                                             |              |                                             |              |                        |              | 3,555,787          |                     |             |                                               |                        | 3,555,787       |
| Shares issued for private placement                               |                                            |              | 10,000                                      | 100          | 5,250                                       | 53           | 1,623,377              | 16,234       | 4,724,969          |                     |             |                                               |                        | 4,741,350       |
| Employee share purchases                                          |                                            |              |                                             |              |                                             |              | 48,813                 | 488          | 77,510             |                     |             |                                               |                        | 77,991          |
| Shares issued under Directors' deferred compensation plan         |                                            |              |                                             |              |                                             |              | 15,629                 | 156          | 74,344             |                     |             |                                               |                        | 74,500          |
| Shares issued to a consultant                                     |                                            |              |                                             |              |                                             |              | 8,333                  | 83           | 24,917             |                     |             |                                               |                        | 25,000          |
| Reclassification of liability classified option grants            |                                            |              |                                             |              |                                             |              |                        |              | (565,604)          |                     |             |                                               |                        | (565,604)       |
| Resting of unvested shares                                        |                                            |              |                                             |              |                                             |              | 17,104                 | 171          | (171)              |                     |             |                                               |                        |                 |
| Treasury stock received for unvested share tax payments           |                                            |              |                                             |              |                                             |              |                        |              |                    | (5,953)             | (12,168)    |                                               |                        | (12,168)        |
| Dividend on Series A convertible preferred stock (\$25 per share) |                                            |              |                                             |              |                                             |              |                        |              | (790,500)          |                     |             |                                               |                        | (790,500)       |
| Balance at December 31, 2007                                      | 31,620                                     | \$ 316       | 10,000                                      | \$ 100       | 5,250                                       | \$ 53        | 47,557,007             | \$ 475,570   | \$ 451,114,779     | (5,953)             | \$ (12,168) | \$                                            | \$ (498,638,953)       | \$ (47,060,303) |

See accompanying notes to consolidated financial statements.



**Table of Contents****ANTIGENICS INC. AND SUBSIDIARIES****CONSOLIDATED STATEMENTS OF CASH FLOWS****For the Years Ended December 31, 2007, 2006 and 2005**

|                                                                             | 2007            | 2006            | 2005            |
|-----------------------------------------------------------------------------|-----------------|-----------------|-----------------|
| Cash flows from operating activities:                                       |                 |                 |                 |
| Net loss                                                                    | \$ (36,795,057) | \$ (51,880,549) | \$ (74,103,554) |
| Adjustments to reconcile net loss to net cash used in operating activities: |                 |                 |                 |
| Depreciation and amortization                                               | 5,420,330       | 5,655,595       | 5,593,661       |
| Share-based compensation                                                    | 3,055,620       | 3,036,211       | (36,829)        |
| Non-cash interest expense                                                   | 2,067,200       | 333,333         |                 |
| Write-down of plant and equipment                                           | 5,137           | 695,894         | 243,225         |
| Loss on sale of assets                                                      |                 | 37,900          | 22,068          |
| Asset impairment                                                            |                 | 805,861         |                 |
| Changes in operating assets and liabilities:                                |                 |                 |                 |
| Accounts receivable                                                         | (136,214)       | (136,907)       | 30,045          |
| Inventories                                                                 | (72,228)        | (187,591)       | (81,310)        |
| Prepaid expenses                                                            | 470,573         | 357,660         | 259,743         |
| Accounts payable                                                            | (425,197)       | (1,500,449)     | (333,874)       |
| Deferred revenue                                                            | 1,322,866       | 2,941,446       | 187,224         |
| Accrued liabilities and other current liabilities                           | (1,645,941)     | (4,780,540)     | 1,545,883       |
| Other operating assets and liabilities                                      | 41,913          | (316,934)       | 347,926         |
| Net cash used in operating activities                                       | (26,690,998)    | (44,939,070)    | (66,325,792)    |
| Cash flows from investing activities:                                       |                 |                 |                 |
| Proceeds from maturities of available-for-sale securities                   | 22,750,000      | 21,100,000      | 143,409,815     |
| Purchases of available-for-sale securities                                  | (11,051,841)    | (8,114,749)     | (100,940,028)   |
| Investment in AGTC                                                          | (165,000)       | (285,000)       | (300,000)       |
| Distribution from AGTC                                                      |                 |                 | 123,169         |
| Proceeds from sale of limited partner interest in AGTC                      | 1,665,000       |                 |                 |
| Proceeds from sale of equipment                                             |                 | 33,257          |                 |
| Purchases of plant and equipment                                            | (11,208)        | (329,893)       | (2,660,296)     |
| Decrease in restricted cash                                                 |                 | 2,983,178       | 2,138,505       |
| Net cash provided by investing activities                                   | 13,186,951      | 15,386,793      | 41,771,165      |
| Cash flows from financing activities:                                       |                 |                 |                 |
| Net proceeds from sale of equity                                            | 4,741,356       |                 |                 |
| Deferred offering costs                                                     | (202,000)       |                 |                 |
| Proceeds from exercise of stock options                                     |                 | 272,109         |                 |
| Proceeds from employee stock purchases                                      | 77,998          | 197,191         | 327,296         |
| Treasury stock received to satisfy minimum tax withholding requirements     | (12,168)        |                 |                 |
| Payments of series A convertible preferred stock dividends                  | (790,500)       | (790,500)       | (790,500)       |
| Proceeds from long-term debt                                                |                 | 25,000,000      | 50,000,000      |
| Debt issuance costs                                                         | (50,000)        | (101,041)       | (1,992,742)     |
| Payments of long-term debt                                                  |                 | (4,023,675)     | (5,752,265)     |
| Net cash provided by financing activities                                   | 3,764,686       | 20,554,084      | 41,791,789      |
| Net (decrease) increase in cash and cash equivalents                        | (9,739,361)     | (8,998,193)     | 17,237,162      |
| Cash and cash equivalents, beginning of year                                | 24,218,683      | 33,216,876      | 15,979,714      |

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|                                                                              |               |               |               |
|------------------------------------------------------------------------------|---------------|---------------|---------------|
| Cash and cash equivalents, end of year                                       | \$ 14,479,322 | \$ 24,218,683 | \$ 33,216,876 |
| Supplemental cash flow information:                                          |               |               |               |
| Cash paid for interest                                                       | \$ 2,625,000  | \$ 2,690,467  | \$ 1,650,569  |
| Cash paid for income taxes                                                   | \$            | \$            | \$ 96,969     |
| Non-cash investing and financing activities:                                 |               |               |               |
| Issuance of senior secured convertible notes as payment in-kind for interest | \$ 2,067,200  | \$ 333,333    | \$            |

See accompanying notes to consolidated financial statements.



## **Table of Contents**

### **ANTIGENICS INC. AND SUBSIDIARIES**

#### **NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**

##### **(1) Description of Business**

Antigenics Inc. (including its subsidiaries, also referred to as Antigenics, the Company, we, us, and our) is a biotechnology company researching and/or developing technologies and product candidates to treat cancers and infectious diseases. Our lead product candidates are Oncophage® (vitespen), a patient-specific therapeutic cancer vaccine, and QS-21 Stimulon® adjuvant (QS-21), which is used in numerous vaccines under development for a variety of diseases, including hepatitis, human immunodeficiency virus (HIV), influenza, cancer, Alzheimer's disease, malaria, and tuberculosis.

Our product candidates require clinical trials and approvals from regulatory agencies, as well as acceptance in the marketplace. We are conducting clinical trials in various cancers and in one infectious disease indication. Part of our strategy is to develop and commercialize some of our product candidates by continuing our existing collaborative arrangements with academic and corporate collaborators and licensees and by entering into new collaborations.

We have incurred significant losses since inception and, as a result, at December 31, 2007 we had an accumulated deficit of \$498.6 million. We have financed our operations primarily through the sale of equity and convertible notes, interest income earned on cash, cash equivalents, and short-term investment balances, and debt provided through secured lines of credit. We believe, based on our current plans and activities, that our working capital resources at December 31, 2007, along with the proceeds from our financing completed in January 2008 (see Note 19 for further details), and the estimated proceeds from our license, supply, and collaborative agreements, will be sufficient to satisfy our liquidity requirements into 2009. Satisfying our long-term liquidity needs may require the successful commercialization of product candidates and will require additional capital.

##### **(2) Summary of Significant Accounting Policies**

###### ***(a) Basis of Presentation and Principles of Consolidation***

The consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles and include the accounts of Antigenics and our wholly-owned subsidiaries. All significant intercompany transactions and accounts have been eliminated in consolidation. Certain prior period amounts have been reclassified in order to conform to the current period's presentation.

###### ***(b) Segment Information***

We are managed and operated as one business. The entire business is managed by a single executive operating committee that reports to the chief executive officer. We do not operate separate lines of business with respect to any of our product candidates. Accordingly, we do not prepare discrete financial information with respect to separate product areas or by location and do not have separately reportable segments as defined by Statement of Financial Accounting Standards (SFAS) No. 131, *Disclosures about Segments of an Enterprise and Related Information*.

###### ***(c) Use of Estimates***

The preparation of consolidated financial statements in conformity with U.S. generally accepted accounting principles requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. We base those estimates on historical experience and on various assumptions that are believed to be reasonable under the circumstances. Actual results could differ from those estimates.

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**Table of Contents**

***(d) Cash and Cash Equivalents***

We consider all highly liquid investments purchased with maturities at acquisition of three months or less to be cash equivalents. As of December 31, 2007 and 2006, cash equivalents consist primarily of money market funds.

***(e) Investments***

We classify investments in marketable securities at the time of purchase. At December 31, 2007 and 2006, all marketable securities are classified as available-for-sale and as such, the investments are recorded at fair value with changes in fair value reported as a component of accumulated other comprehensive loss. Gains and losses on the sale of marketable securities are recognized in operations based on the specific identification method.

Investments of less than 20% of the voting control of companies or other entities over whose operating and financial policies we do not have the power to exercise significant influence are accounted for by the cost method. We record our investments at cost and recognize dividends received as income. The carrying values of investments are periodically reviewed to determine whether any decline in value is other than temporary. Other than temporary declines in the value of available-for-sale securities and other investments are charged to operations.

***(f) Concentrations of Credit Risk***

Financial instruments that potentially subject us to concentrations of credit risk are primarily cash and cash equivalents, marketable securities, and accounts receivable. We invest our cash and cash equivalents in accordance with our Investment Policy, which specifies high credit quality standards and limits the amount of credit exposure from any single issue, issuer, or type of investment. We carry balances in excess of federally insured levels, however, we have not experienced any losses to date from this practice. Credit risk on accounts receivable is minimized by the financial position of the entities with which we do business. Credit losses from our customers have been immaterial.

***(g) Inventories***

Inventories are stated at the lower of cost or market. Cost has been determined using standard costs that approximate the first-in, first-out method.

***(h) Plant and Equipment***

Plant and equipment, including software developed for internal use, are carried at cost. Depreciation is computed using the straight-line method over the estimated useful lives of the assets. Amortization of leasehold improvements is computed over the shorter of the lease term or estimated useful life of the asset. Additions and improvements are capitalized, while repairs and maintenance are charged to expense as incurred.

***(i) Fair Value of Financial Instruments***

The fair value of a financial instrument represents the amount at which the instrument could be exchanged in a current transaction between willing parties, other than in a forced sale or liquidation. Significant differences can arise between the fair value and carrying amounts of financial instruments that are recognized at historical cost amounts. The estimated fair values of all of our financial instruments, excluding debt, approximate their carrying amounts in the consolidated balance sheets. The fair value of our long-term debt was derived by evaluating the nature and terms of each note and considering the prevailing economic and market conditions at the balance sheet date. In addition, the fair value of our convertible senior notes was estimated based on the most recently available trader quotes. The carrying amount of debt, including current portion, is \$77.5 million and \$75.5 million at December 31, 2007 and 2006, respectively, and the fair value is estimated to be \$60.4 million and \$57.6 million at December 31, 2007 and 2006, respectively.

## **Table of Contents**

### ***(j) Revenue Recognition***

Revenue for services under research and development contracts are recognized as the services are performed, or as clinical trial materials are provided. Non-refundable milestone payments that represent the completion of a separate earnings process are recognized as revenue when earned. License fees and royalties are recognized as they are earned. Revenue recognized from collaborative agreements, is based upon the provisions of Securities and Exchange Commission ( SEC ) Staff Accounting Bulletin ( SAB ) No. 104, *Revenue Recognition*, and Emerging Issues Task Force ( EITF ) Issue No. 00-21, *Revenue Arrangements with Multiple Deliverables*. To date, we have recognized no revenue from the sale of commercialized products. For the years ended December 31, 2007 and 2006, 68% and 89%, respectively, of our revenue was earned from one research partner. For the year ended December 31, 2005, 55% and 43% of our revenue was earned from two research partners.

### ***(k) Research and Development***

Research and development expenses include the costs associated with our internal research and development activities, including salaries and benefits, occupancy costs, clinical manufacturing costs, related administrative costs, and research and development conducted for us by outside advisors, such as sponsored university-based research partners and clinical study partners. We account for our clinical study costs by estimating the total cost to treat a patient in each clinical trial and recognizing this cost based on estimates of when the patient receives treatment, beginning when the patient enrolls in the trial. Research and development expenses also include all expenses related to any grant revenue recognized, as well as the cost of clinical trial materials shipped to our research partners. Research and development costs are expensed as incurred.

### ***(l) Share-Based Compensation***

Effective January 1, 2006, we adopted the fair value recognition provisions of SFAS No. 123R, *Share-Based Payment* ( SFAS No. 123R ), using the modified prospective transition method, and therefore have not restated prior periods' results. Our results of operations for the years ended December 31, 2007 and 2006 were impacted by the recognition of non-cash expense related to the fair value of our stock-based compensation awards. During the year ended December 31, 2007, we recorded a net charge of \$3.1 million related to stock-based compensation, of which a charge of \$892,000 is included in research and development expense and a charge of \$2.2 million is included in general and administrative expense. During the year ended December 31, 2006, we recorded a net charge of \$3.0 million related to stock-based compensation, of which a credit of \$74,000 is included in research and development expense and a charge of \$3.1 million is included in general and administrative expense. Stock-based compensation expense for the years ended December 31, 2007 and 2006 includes compensation expense for all stock-based options granted prior to, but not yet vested as of January 1, 2006, based on the grant date value estimated in accordance with the original provision of SFAS No. 123, *Accounting for Stock-Based Compensation* ( SFAS No. 123 ). In addition, stock-based compensation expense for the years ended December 31, 2007 and 2006 includes compensation expense for all stock-based options granted, modified, or settled after January 1, 2006, based on the grant date fair value estimated in accordance with the provisions of SFAS No. 123R. Under the fair value recognition provisions of SFAS No. 123R, we recognize stock-based compensation net of an estimated forfeiture rate and only recognize compensation cost for those shares expected to vest. Compensation cost is recognized on a straight-line basis over the requisite service period of the award. In March 2005, the SEC issued SAB No. 107, *Share-Based Payment* ( SAB No. 107 ), which contained the SEC's guidance on SFAS No. 123R and the valuation of share-based payments for public companies. We applied the provisions of SAB No. 107 in the adoption of SFAS No. 123R. See Note 10 for a further discussion on stock-based compensation.

### ***(m) Income Taxes***

Income taxes are accounted for under the asset and liability method with deferred tax assets and liabilities recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax basis and net operating loss and tax credit

## **Table of Contents**

carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which such items are expected to be reversed or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in operations in the period that includes the enactment date. Deferred tax assets are recorded when they more likely than not are expected to be realized.

### ***(n) Net Loss Per Share***

Basic loss per common share ( EPS ) is calculated by dividing the net loss attributable to common stockholders by the weighted average number of common shares outstanding and common shares issuable under our directors' deferred compensation plan. Diluted EPS is calculated by dividing the net loss attributable to common stockholders by the weighted average number of common shares outstanding plus the dilutive effect of outstanding stock options and nonvested shares, our series A convertible preferred stock, our class B convertible preferred stock, our 5.25% convertible senior notes due 2025, and the senior secured convertible notes (the 2006 Notes ). Because we have reported a net loss attributable to common stockholders for all periods, diluted loss per common share is the same as basic loss per common share, as the effect of including shares underlying the outstanding stock options and nonvested shares, the series A convertible preferred stock, the class B convertible preferred stock, the 5.25% convertible senior notes due 2025, and the 2006 Notes in the calculation would have reduced the net loss per common share. Therefore, shares underlying the 6,783,901 outstanding stock options, the 440,878 outstanding nonvested shares, the 31,620 outstanding shares of series A convertible preferred stock, the 10,000 outstanding shares of series B1 convertible preferred stock, the 5,250 outstanding shares of series B2 convertible preferred stock, and the impact of conversion of the 5.25% convertible senior notes due 2025 and the 2006 Notes are not included in the calculation of diluted net loss per common share.

### ***(o) Goodwill and Acquired Intangible Assets***

Goodwill represents the excess of cost over the fair value of net assets of businesses acquired. In accordance with SFAS No. 142, *Goodwill and Other Intangible Assets* ( SFAS No. 142 ), goodwill is not amortized, but instead tested for impairment at least annually. SFAS No. 142 also requires that intangible assets with estimable useful lives be amortized over their respective estimated useful lives to their estimated residual values, and reviewed for impairment in accordance with SFAS No. 144, *Accounting for the Impairment or Disposal of Long-Lived Assets* ( SFAS No. 144 ).

SFAS No. 142 requires us to assess annually whether there is an indication that goodwill is impaired, or more frequently if events and circumstances indicate that the asset might be impaired during the year. We perform our annual impairment test on October 31 of each year. We consider ourselves a single reporting unit for purposes of the impairment test. We determine our fair value using the quoted market price of our common stock, adjusted for certain factors, and compare it to our net book value at the date of our evaluation. To the extent our net book value exceeds the fair value, there is an indication that the reporting unit goodwill may be impaired and a second step of the impairment test is performed to determine the amount of the impairment to be recognized, if any.

The costs of core and developed technology are presented at estimated fair value at acquisition date. These costs are being amortized on a straight-line basis over their estimated useful lives of 10 years.

### ***(p) Accounting for Asset Retirement Obligations***

We account for asset retirement obligations in accordance with SFAS No. 143, *Accounting for Asset Retirement Obligations* ( SFAS No. 143 ). SFAS No. 143 requires us to record the fair value of an asset retirement obligation as a liability in the period in which we incur a legal obligation associated with the retirement of tangible long-lived assets that result from the acquisition, construction, development, and/or normal use of the assets. A legal obligation is a liability that a party is required to settle as a result of an existing or enacted law, statute, ordinance, or contract. We are also required to record a corresponding asset that is

## **Table of Contents**

depreciated over the life of the asset. Subsequent to the initial measurement of the asset retirement obligation, the obligation will be adjusted at the end of each period to reflect the passage of time (accretion) and changes in the estimated future cash flows underlying the obligation. Changes in the liability due to accretion are charged to the consolidated statement of operations, whereas changes due to the timing or amount of cash flows are an adjustment to the carrying amount of the related asset. Our asset retirement obligations primarily relate to the expiration of our facility leases and anticipated costs to be incurred based on our lease terms.

### ***(q) Long-lived Assets***

SFAS No. 144 requires that long-lived assets, except goodwill and intangible assets not being amortized, be reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to the undiscounted future net cash flows expected to be generated by the asset. If the carrying amount of an asset exceeds its estimated future undiscounted cash flows, an impairment charge is recognized for the amount by which the carrying amount of the asset exceeds the fair value of the asset. SFAS No. 144 requires companies to separately report discontinued operations and extends that reporting to a component of an entity that either has been disposed of (by sale, abandonment, or in a distribution to owners) or is classified as held for sale. Assets to be disposed of are reported at the lower of the carrying amount or fair value less costs to sell.

### ***(r) Recent Accounting Pronouncements***

On January 1, 2007, we adopted Financial Accounting Standards Board ( FASB ) Interpretation No. 48, *Accounting for Uncertainty in Income Taxes* ( FIN 48 ), which is intended to clarify the accounting for income taxes by prescribing a minimum recognition threshold for a tax position before being recognized in the financial statements. FIN 48 also provides guidance on measurement, derecognition, classification, interest and penalties, accounting in interim periods, disclosure, and transition. At the adoption of FIN 48 and as of December 31, 2007, total uncertain tax positions were immaterial and accordingly, no adjustments to the consolidated financial statements were required. We do not anticipate any material changes in the amount of unrecognized tax positions over the next twelve months.

In September 2006, the FASB issued SFAS No. 157, *Fair Value Measurements* ( SFAS No. 157 ). SFAS No. 157 establishes a framework for measuring fair value and expands disclosures about fair value measurements. SFAS No. 157 became effective for our financial assets and liabilities on January 1, 2008. On February 12, 2008, the FASB issued FASB Staff Position ( FSP ) No. FAS 157-2, *Effective Date of FASB Statement No. 157* ( FSP FAS No. 157-2 ) to provide a partial deferral of SFAS No. 157. FSP FAS No. 157-2 defers the effective date of SFAS No. 157 for all nonfinancial assets and liabilities, excluding those recognized or disclosed at fair value in an entity's financial statements on a recurring basis (at least annually), until fiscal years beginning after November 15, 2008. We are currently evaluating what effect, if any, the adoption of SFAS No. 157 will have on our results of operations and financial position.

In February 2007, the FASB issued SFAS No. 159, *The Fair Value Option for Financial Assets and Financial Liabilities* ( SFAS No. 159 ). SFAS No. 159 provides companies with the option to measure specified financial instruments and certain other items at fair value. We are required to adopt SFAS No. 159 as of January 1, 2008. We are currently evaluating what effect, if any, the adoption of SFAS No. 159 will have on our results of operations and financial position.

In December 2007, the FASB issued SFAS No. 141 (revised 2007), *Business Combinations* ( SFAS No. 141R ). This revised standard expands the types of transactions or other events that will qualify as business combinations and requires that all business combinations will result in all assets and liabilities of the acquired business being recorded at their fair values, with limited exceptions. The standard also requires, among other provisions, that certain contingent assets and liabilities will be recognized at their fair values on the acquisition

**Table of Contents**

date. An acquirer will also recognize contingent consideration at its fair value on the acquisition date and, for certain arrangements, changes in fair value will be recognized in earnings until the contingency is settled. Under SFAS No. 141R, acquisition-related transaction and restructuring costs will be expensed rather than treated as part of the cost of the acquisition and included in the amount recorded for assets acquired. SFAS No. 141R is required to be applied prospectively to business combinations for which the acquisition is on or after the beginning of the first annual reporting period beginning on or after December 15, 2008, and may not be early adopted.

In December 2007, the FASB also issued SFAS No. 160, *Noncontrolling Interests in Consolidated Financial Statements* ( SFAS No. 160 ). SFAS No. 160, which is effective for fiscal years, and interim periods within those fiscal years, beginning on or after December 15, 2008, governs the accounting for and reporting of noncontrolling interests in partially owned consolidated subsidiaries and the loss of control in subsidiaries. We do not expect that the adoption of SFAS No. 160 will have a material impact on our financial position or results of operations.

**(3) Inventories**

Inventories are stated at cost using the first-in, first-out method. The components of inventories are as follows (in thousands).

|                 | December 31,<br>2007 | December 31,<br>2006 |
|-----------------|----------------------|----------------------|
| Work in process | \$ 414               | \$ 344               |
| Finished goods  | 97                   | 95                   |
|                 | \$ 511               | \$ 439               |

**(4) Investments*****Cash Equivalents and Short-term Investments***

Our unrealized holding gains and losses in available-for-sale securities are as follows at December 31, 2007 and 2006 (in thousands).

|                              | 2007<br>Unrealized<br>Holding |        | 2006<br>Unrealized<br>Holding |        |
|------------------------------|-------------------------------|--------|-------------------------------|--------|
|                              | Gains                         | Losses | Gains                         | Losses |
| Government backed securities | \$                            | \$     | \$                            | \$ 22  |

Available-for-sale securities consisted of the following at December 31, 2007 and 2006 (in thousands).

|                                  | 2007      |                         | 2006      |                         |
|----------------------------------|-----------|-------------------------|-----------|-------------------------|
|                                  | Cost      | Estimated<br>Fair Value | Cost      | Estimated<br>Fair Value |
| Institutional money market funds | \$ 15,082 | \$ 15,082               | \$ 16,929 | \$ 16,929               |
| Auction rate securities          | 4,200     | 4,200                   | 11,625    | 11,625                  |
| Government backed securities     |           |                         | 11,586    | 11,564                  |
|                                  | \$ 19,282 | \$ 19,282               | \$ 40,140 | \$ 40,118               |

Proceeds from maturities of available-for-sale securities amounted to \$22.8 million, \$21.1 million, and \$143.4 million for the years ended December 31, 2007, 2006, and 2005, respectively. No available-for-sale securities were sold before their maturity in 2007, 2006, or 2005. Gross realized gains and gross realized losses



## **Table of Contents**

included in net loss as a result of those maturities were immaterial for each of the years in the three-year period ended December 31, 2007. The change in net unrealized holding gains included in comprehensive loss amounted to \$22,000, \$66,000, and \$59,000 for the years ended December 31, 2007, 2006, and 2005, respectively.

Of the available-for-sale securities listed above, \$15.1 million and \$24.5 million have been classified as cash equivalents on our consolidated balance sheet at December 31, 2007 and 2006, respectively. Approximately \$4.2 million and \$15.9 million have been classified as short-term investments at December 31, 2007 and 2006, respectively.

The contractual maturities of available-for-sale securities at December 31, 2007 are \$15.1 million in 2008, and \$4.2 million between 2027 and 2046. Securities with contractual maturities between 2027 and 2046 are auction rate securities and similar instruments and are classified as short-term investments, as we have the intent and ability to sell these securities as needed. Subsequent to December 31, 2007, we liquidated our entire portfolio of auction rate securities and transferred the proceeds into institutional money market funds. No loss was incurred on the liquidation of the auction rate securities.

### ***Long-term Investments***

On May 18, 2000, we committed \$3.0 million to become a limited partner in a limited partnership called Applied Genomic Technology Capital Fund ( AGTC ), which invests principally in companies that apply genomic technologies and information in their offerings of products and services or that are engaged in research and development involving genomic technologies. Capital contributions to the limited partnership were made as requested by the general partner. During the year ended December 31, 2005, we received a cash distribution from AGTC of \$123,000, which was recorded as a reduction in the carrying value of our investment. This investment was accounted for under the cost method, as our ownership interest was approximately 2%.

In order to assess whether or not there was an other than temporary decline in the value of this investment, we analyzed several factors, including: (1) the carrying value of the limited partnership's investments in its portfolio companies, (2) how recently the investments in the portfolio companies have been made, (3) the post-financing valuations of those investments, (4) the level of uninvested capital held by the limited partnership, and (5) overall trends in venture capital valuations. We entered into a formal plan in December 2006 to sell our limited partner interest in AGTC, identified potential buyers, and received offers. As a result, we concluded that an other than temporary decline in the value of this investment had occurred as of December 31, 2006 and we reduced the carrying value (the cost of our investment in this partnership) by \$806,000 to \$1.5 million at December 31, 2006. This impairment charge was included in general and administrative expense.

Our investment balance aggregated \$1.5 million at December 31, 2006 and was included in other long-term assets. The difference between the total amount invested and the carrying value was the result of distributions and other than temporary impairment charges.

On January 9, 2007, we contributed the final capital call of \$165,000 to AGTC, and on February 2, 2007, we completed the sale of our limited partner interest in AGTC to an accredited investor and received \$1.7 million. No gain or loss was realized on this sale in 2007.

The management company for AGTC is NewcoGen Group Inc., which is a wholly-owned subsidiary of Flagship Ventures Management, Inc. ( Flagship ). Noubar Afeyan, Ph.D., who was one of our directors, is Managing Partner and Chief Executive Officer of Flagship. In addition, Garo H. Armen, Ph.D., our Chairman and Chief Executive Officer, was a director of NewcoGen Group Inc. until 2004.



**Table of Contents****(5) Plant and Equipment**

Plant and equipment at December 31, 2007 and 2006 consists of the following (in thousands).

|                                                | 2007      | 2006      | Estimated<br>Depreciable<br>Lives |
|------------------------------------------------|-----------|-----------|-----------------------------------|
| Furniture, fixtures, and other                 | \$ 1,646  | \$ 1,635  | 3 to 10 years                     |
| Laboratory and manufacturing equipment         | 6,892     | 6,905     | 4 to 10 years                     |
| Leasehold improvements                         | 22,665    | 22,445    | 2 to 12 years                     |
| Software and computer equipment                | 6,029     | 6,023     | 3 years                           |
| Construction in progress                       |           | 221       |                                   |
|                                                | 37,232    | 37,229    |                                   |
| Less accumulated depreciation and amortization | (22,628)  | (18,610)  |                                   |
|                                                | \$ 14,604 | \$ 18,619 |                                   |

Plant and equipment, net that was retired and removed from the accounts aggregated \$5,000 and \$668,000 for the years ended December 31, 2007 and 2006, respectively.

**(6) Other Intangible Assets**

The following table presents certain information on our intangible assets as of December 31, 2007 and 2006 (in thousands).

|                               |                                               | As of December 31, 2007     |                             |                           | As of December 31, 2006     |                             |                           |
|-------------------------------|-----------------------------------------------|-----------------------------|-----------------------------|---------------------------|-----------------------------|-----------------------------|---------------------------|
|                               | Weighted<br>Average<br>Amortization<br>Period | Gross<br>Carrying<br>Amount | Accumulated<br>Amortization | Net<br>Carrying<br>Amount | Gross<br>Carrying<br>Amount | Accumulated<br>Amortization | Net<br>Carrying<br>Amount |
| Amortizing intangible assets: |                                               |                             |                             |                           |                             |                             |                           |
| Core and developed technology | 10 years                                      | \$ 11,073                   | \$ 7,539                    | \$ 3,534                  | \$ 11,073                   | \$ 6,432                    | \$ 4,641                  |

Our intangible assets are being amortized over their estimated useful lives of 10 years, with no estimated residual values. Amortization expense related to core and developed technology amounted to \$1.1 million for each of the years ended December 31, 2007, 2006, and 2005. Amortization expense is estimated at \$1.1 million for each of the years 2008 through 2010 and \$265,000 in 2011.

**(7) Income Taxes**

We are subject to taxation in the U.S. and various state, local, and foreign jurisdictions. We remain subject to examination by U.S. Federal, state, local, and foreign tax authorities for tax years 2004 through 2007. With a few exceptions, we are no longer subject to U.S. Federal, state, local, and foreign examinations by tax authorities for the tax year 2003 and prior. However, net operating losses from the tax year 2003 and prior would be subject to examination if and when used in a future tax return to offset taxable income. Our policy is to recognize income tax related penalties and interest, if any, in our provision for income taxes and, to the extent applicable, in the corresponding income tax assets and liabilities, including any amounts for uncertain tax positions.

As of December 31, 2007, we have available net operating loss carryforwards of \$449 million and \$296.2 million for federal and state income tax purposes, respectively, which are available to offset future federal and state taxable income, if any, and expire between 2008 and 2027. These net operating loss carryforwards include \$80.8 million for federal income tax purposes that was acquired in our mergers. Our ability to use such net operating losses is limited by change of control provisions under Internal Revenue Code Section 382 and may expire unused. In addition, we have \$8.9 million and \$6.2 million of federal and state research and development



## Table of Contents

credits, respectively, available to offset future taxable income. These federal and state research and development credits expire between 2020 and 2027, and 2015 and 2022, respectively. The potential impacts of such provisions are among the items considered and reflected in management's assessment of our valuation allowance requirements.

The tax effect of temporary differences and net operating loss and tax credit carryforwards that give rise to significant portions of the deferred tax assets and deferred tax liabilities as of December 31, 2007 and 2006 are presented below (in thousands).

|                                     | 2007       | 2006       |
|-------------------------------------|------------|------------|
| Deferred tax assets:                |            |            |
| Net operating loss carryforwards    | \$ 170,210 | \$ 161,388 |
| Research and development tax credit | 13,025     | 11,908     |
| Other                               | 10,251     | 6,574      |
| Total deferred tax assets           | 193,486    | 179,870    |
| Less: valuation allowance           | (192,075)  | (178,289)  |
| Net deferred tax assets             | 1,411      | 1,581      |
| Deferred tax liabilities            | (1,411)    | (1,581)    |
| Net deferred tax                    | \$         | \$         |

In assessing the realizability of deferred tax assets, we consider whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which the net operating loss and tax credit carryforwards can be utilized or the temporary differences become deductible. We consider projected future taxable income and tax planning strategies in making this assessment. In order to fully realize the deferred tax asset, we will need to generate future taxable income sufficient to utilize net operating losses prior to their expiration. Based upon our history of not generating taxable income due to our business activities focused on product development, we believe that it is more likely than not that deferred tax assets will not be realized through future earnings. Accordingly, a valuation allowance has been established for deferred tax assets, which will not be offset by the reversal of deferred tax liabilities. The valuation allowance on the deferred tax assets increased by \$13.8 million during the year ended December 31, 2007 and increased by \$19.0 million during the year ended December 31, 2006. The valuation allowance includes amounts pertaining to tax deductions relating to stock exercises for which any subsequently recognized tax benefit will be recorded as an increase to additional paid-in capital. Of the deferred tax assets related to the federal net operating loss carryforwards, \$27.5 million relates to net operating loss carryforwards acquired in our mergers, as of December 31, 2007. If adjustments are made to the valuation allowance related to these net operating loss carryforwards, such adjustment will result in a reduction to our goodwill and/or other acquired intangible assets.

Income tax benefit was nil for each of the years ended December 31, 2007, 2006, and 2005, and differed from the amounts computed by applying the U.S. Federal income tax rate of 34% to loss before income taxes as a result of the following (in thousands).

|                                                                   | 2007        | 2006        | 2005        |
|-------------------------------------------------------------------|-------------|-------------|-------------|
| Computed expected federal tax benefit                             | \$ (12,510) | \$ (17,639) | \$ (25,195) |
| (Increase) reduction in income taxes benefit resulting from:      |             |             |             |
| Change in valuation allowance                                     | 13,786      | 19,033      | 33,923      |
| State and local income benefit, net of Federal income tax benefit | (2,184)     | (3,082)     | (4,402)     |
| Other, net                                                        | 908         | 1,688       | (4,326)     |
|                                                                   | \$          | \$          | \$          |

**Table of Contents****(8) Accrued Liabilities**

Accrued liabilities consist of the following at December 31, 2007 and 2006 (in thousands).

|                               | 2007     | 2006     |
|-------------------------------|----------|----------|
| Professional fees             | \$ 1,358 | \$ 1,167 |
| Interest on convertible notes | 1,108    | 1,108    |
| Payroll                       | 1,045    | 1,188    |
| Clinical contractors          | 717      | 764      |
| Clinical trials               | 593      | 1,879    |
| Other                         | 963      | 1,480    |
|                               | \$ 5,784 | \$ 7,586 |

**(9) Equity**

Our authorized capital stock consists of 250,000,000 and 100,000,000 shares of \$0.01 par value per share common stock at December 31, 2007 and 2006, respectively, and 25,000,000 shares of preferred stock, \$0.01 par value per share. Our Board of Directors is authorized to issue the preferred stock and to set the voting, conversion, and other rights.

On September 10, 2007, we issued 1,623,377 shares of our common stock at a price of \$3.08 per share to a single institutional investor. In conjunction with this transaction, we also issued to the investor 10,000 shares of our new series B1 convertible preferred stock and 5,250 shares of our new series B2 convertible preferred stock (collectively, our class B convertible preferred stock). Shares of the series B1 convertible preferred stock permit the investor, within one year of the anniversary of closing, to purchase up to an additional \$10.0 million of common shares at a purchase price equal to the lesser of \$3.08 per share or a price calculated based on the then-prevailing price of our common stock minus \$0.30 per share. Shares of the series B2 convertible preferred stock permit the investor to purchase common shares for consideration of up to 35 percent of the total dollar amount previously invested pursuant to the agreement with the investor, including conversions of the series B1 convertible preferred stock, at a purchase price equal to the lesser of \$4.16 per common share or a price calculated based on the then-prevailing price of our common stock, and such right expires seven years from the date of issuance. The total number of shares of common stock issued or issuable to the holder of the class B convertible preferred stock cannot exceed 19.9% of our outstanding common stock. No dividends are paid on the class B convertible preferred stock and there are no liquidation preferences. Gross proceeds of \$5.0 million were received as a result of this transaction. Net proceeds, after deducting the placement agent fees and offering expenses paid by us, were \$4.7 million. The class B convertible preferred stock has been recorded as an equity classified instrument in accordance with SFAS No. 133, *Accounting for Derivative Instruments and Hedging Activities* (SFAS No. 133) and EITF Issue No. 00-19, *Accounting for Derivative Financial Instruments Indexed to, and Potentially Settled in, a Company's Own Stock* (EITF Issue No. 00-19).

In a private placement in September 2003, we sold 31,620 shares of our series A convertible preferred stock, par value \$0.01 per share, for net proceeds of \$31.6 million, after deducting offering costs of \$14,000. Under the terms and conditions of the Certificate of Designation creating the series A convertible preferred stock, this stock is convertible by the holder at any time into our common stock, is non-voting, carries a 2.5% annual dividend yield, has an initial conversion price of \$15.81 per common share, subject to adjustment, and is redeemable by us at its face amount (\$31.6 million) on or after September 24, 2013. The Certificate of Designation does not contemplate a sinking fund. The series A convertible preferred stock ranks senior to our common stock. In a liquidation, dissolution, or winding up of the Company, the series A convertible preferred stock's liquidation preference must be fully satisfied before any distribution could be made to the common stock. Other than in such a liquidation, no terms of the series A convertible preferred stock affect our ability to declare or pay dividends on our common stock as long as the series A convertible preferred stock's dividends are accruing. The liquidation value of this series A convertible preferred stock is equal to \$1,000 per share outstanding plus any accrued

## **Table of Contents**

unpaid dividends. Accrued and unpaid dividends of the series A convertible preferred stock aggregated \$197,625 or \$6.25 per share at December 31, 2007.

During the year ended December 31, 2007, certain employees, in lieu of paying withholding taxes on the vesting of restricted stock awarded under our 1999 Equity Incentive Plan, as amended (the "1999 Equity Plan") authorized the withholding of an aggregate of 5,953 shares of common stock to satisfy the minimum tax withholding requirements related to such vesting. We recorded these shares as treasury stock using the cost method at the market price of the common stock on the vesting dates.

### **(10) Share-based Compensation Plans**

Our 1999 Equity Plan authorizes awards of incentive stock options within the meaning of Section 422 of the Internal Revenue Code, non-qualified stock options, nonvested (restricted) stock, and unrestricted stock for up to 10,000,000 shares of common stock (subject to adjustment for stock splits and similar capital changes and exclusive of options exchanged at the consummation of mergers) to employees and, in the case of non-qualified stock options, nonvested (restricted) stock, and unrestricted stock, to consultants and directors as defined in the 1999 Equity Plan. The Board of Directors appointed the Compensation Committee to administer the 1999 Equity Plan.

Under the 1999 Employee Stock Purchase Plan, as amended (the "1999 ESPP"), employees may purchase shares of common stock at a discount from fair value. There are 450,000 shares of common stock reserved for issuance under the 1999 ESPP. The 1999 ESPP is intended to qualify as an employee stock purchase plan within the meaning of Section 423 of the Internal Revenue Code. Rights to purchase common stock under the 1999 ESPP are granted at the discretion of the Compensation Committee, which determines the frequency and duration of individual offerings under the plan and the dates when stock may be purchased. Eligible employees participate voluntarily and may withdraw from any offering at any time before the stock is purchased. Participation terminates automatically upon termination of employment. The purchase price per share of common stock in an offering will not be less than 85% of the lesser of its fair value at the beginning of the offering period or on the applicable exercise date and may be paid through payroll deductions, periodic lump sum payments, or a combination of both. The plan terminates on November 15, 2009. From inception through December 31, 2007, 266,000 shares of common stock have been purchased under the plan.

Our Director's Deferred Compensation Plan, as amended, permits each outside director to defer all, or a portion of, their cash compensation until their service as a director ends or until a specified date. There are 250,000 shares of our common stock reserved for issuance under this plan. As of December 31, 2007, 15,629 shares have been issued. The plan allows eligible directors to defer all, or a portion, of their cash compensation into a cash account or a stock account. Amounts deferred to a cash account will earn interest at the rate paid on one-year Treasury bills with interest added to the account annually. Amounts deferred to a stock account will be converted on a quarterly basis into a number of units representing shares of our common stock equal to the amount of compensation which the participant has elected to defer to the stock account divided by the applicable price for our common stock. The applicable price for our common stock is defined as the average of the closing price of our common stock for all trading days during the calendar quarter preceding the conversion date as reported by the NASDAQ Global Market. Pursuant to this plan, 123,889 units, each representing a share of our common stock at a weighted average common stock price of \$4.03, were credited to participants' stock accounts as of December 31, 2007. The compensation charges for this plan were immaterial for all periods presented.

Stock options granted to non-employees are accounted for based on the fair-value method of accounting in accordance with SFAS No. 123R and EITF Issue No. 96-18, *Accounting for Equity Instruments That Are Issued to Other Than Employees for Acquiring, or in Conjunction with Selling, Goods or Services*. As a result, the non-cash charge to operations for non-employee options with vesting or other performance criteria is affected each reporting period, until the non-employee options vest, by changes in the fair value of our common stock.

**Table of Contents**

Certain of our fully vested options granted to non-employees are outside the scope of SFAS No. 123R and are subject to EITF Issue No. 00-19, which requires the stock options held by certain non-employee consultants to be accounted for as liability classified awards. The fair value of these vested and unexercised awards was estimated using the Black-Scholes option pricing model, and \$1.7 million was reclassified from equity to a current liability as of January 1, 2006. The fair value of the award is remeasured each reporting period until the award is settled or expires. During the years ended December 31, 2007 and 2006, we recorded non-cash credits of \$525,000 and \$1.3 million, respectively, based on the remeasurement of these awards. We also reclassified an additional liability of \$566,000 and \$64,000 during the years ended December 31, 2007 and 2006, respectively, based on the vesting of certain of these awards. Non-employees exercised stock options to acquire 64,612 shares of common stock at an exercise price of \$1.45 during the year ended December 31, 2006 and the total liability of \$216,000 as of the exercise dates was reclassified to equity. As of December 31, 2007, stock options to acquire approximately 528,000 shares of common stock are held by non-employee consultants and remained unexercised.

Prior to January 1, 2006, we accounted for options granted to employees and directors in accordance with Accounting Principles Board ( APB ) Opinion No. 25, *Accounting for Stock Issued to Employees*, and related interpretations. As such, compensation cost was recorded for stock option grants only if the fair value of the underlying stock exceeded the exercise price of the option at the date of grant. Any such compensation cost was recognized on a straight-line basis over the vesting period.

We provided pro forma disclosure amounts in accordance with SFAS No. 148, *Accounting for Stock-Based Compensation Transition and Disclosure*, as if the fair value method defined by SFAS No. 123 had been applied to our stock-based compensation plans.

The total compensation related to these plans was a net expense (credit) of \$3.1 million, \$3.0 million, and \$(37,000) for the years ended December 31, 2007, 2006, and 2005, respectively.

The following table illustrates the effect on net loss attributable to common stockholders and net loss attributable to common stockholders per common share, basic and diluted, had compensation cost for options granted to employees and directors and sold through our employee stock purchase plan been determined consistent with the fair value method of SFAS No. 123 (in thousands, except per share data).

|                                                                                                                              | <b>Year Ended<br/>December 31,<br/>2005</b> |
|------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| Net loss attributable to common stockholders, as reported                                                                    | \$ (74,894)                                 |
| Add: Stock-based employee and director compensation recognized under APB Opinion No. 25                                      | 50                                          |
| Deduct: total stock-based employee and director compensation expense determined under fair value based method for all awards | (7,493)                                     |
| Pro forma net loss attributable to common stockholders                                                                       | \$ (82,377)                                 |
| Net loss attributable to common stockholders per common share, basic and diluted:                                            |                                             |
| As reported                                                                                                                  | \$ (1.64)                                   |
| Pro forma                                                                                                                    | \$ (1.81)                                   |

In light of the accounting guidance under SFAS No. 123R and SAB No. 107, we evaluated our assumptions used in estimating the fair value of employee options granted. We also examined our historical pattern of option exercises in an effort to determine if there were any discernable activity patterns based on certain employee populations. From this analysis, we identified two employee populations. We used the Black-Scholes option pricing model to value the options for both of the employee populations as well as our options granted to members of our Board of Directors. The effects of applying SFAS No. 123R, for purposes of recognizing compensation cost under such pronouncement, may not be representative of the effects on our reported results of operations for future years.

**Table of Contents**

All stock option grants are for a ten-year term and generally vest ratably over two to four year periods. The fair value of each option granted during the periods is estimated on the date of grant with the following weighted average assumptions:

|                         | 2007 | 2006 | 2005 |
|-------------------------|------|------|------|
| Expected volatility     | 71%  | 70%  | 68%  |
| Expected term in years  | 6    | 5    | 5    |
| Risk-free interest rate | 4.5% | 4.5% | 4.3% |
| Dividend yield          | 0%   | 0%   | 0%   |

Expected volatility is based exclusively on historical volatility data of the Company's stock. The expected term of stock options granted is based on historical data and other factors and represents the period of time that stock options are expected to be outstanding prior to exercise. The risk-free interest rate is based on U.S. Treasury strips with maturities that match the expected term on the date of grant.

A summary of option activity is presented below:

|                                                 | Options   | Weighted<br>Average<br>Exercise<br>Price | Weighted<br>Average<br>Remaining<br>Contractual<br>Term<br>(Years) | Aggregate<br>Intrinsic<br>Value |
|-------------------------------------------------|-----------|------------------------------------------|--------------------------------------------------------------------|---------------------------------|
| Outstanding at December 31, 2006                | 5,912,850 | \$ 7.17                                  |                                                                    |                                 |
| Granted                                         | 1,768,650 | 2.46                                     |                                                                    |                                 |
| Forfeited or expired                            | (898,599) | 8.60                                     |                                                                    |                                 |
| Outstanding at December 31, 2007                | 6,782,901 | \$ 5.75                                  | 6.69                                                               | \$ 399,626                      |
| Vested or expected to vest at December 31, 2007 | 5,898,781 | \$ 6.09                                  | 6.37                                                               | \$ 331,077                      |
| Exercisable at December 31, 2007                | 3,306,511 | \$ 8.12                                  | 4.76                                                               | \$ 133,429                      |

The weighted average grant-date fair value of options granted during the years ended December 31, 2007, 2006, and 2005 was \$1.57, \$2.21, and \$3.75, respectively.

The aggregate intrinsic value in the table above represents the difference between our closing stock price on the last trading day of fiscal 2007 and the exercise price, multiplied by the number of in-the-money options that would have been received by the option holders had all option holders exercised their options on December 31, 2007. This amount changes based on the fair market value of our stock. The total intrinsic value of options exercised during the year ended December 31, 2006, determined on the date of exercise, was \$915,000. No options were exercised during the years ended December 31, 2007 and 2005.

During 2007, 2006, and 2005, all options were granted with exercise prices equal to the fair market value of the underlying shares of common stock on the grant date.

As of December 31, 2007, \$3.6 million of total unrecognized compensation cost related to stock options granted to employees and directors is expected to be recognized over a weighted average period of approximately 2.3 years.

At December 31, 2007, unrecognized expense for options granted to outside advisors for which performance (vesting) has not yet been completed but the exercise price of the option is known is approximately \$156,000. Such amount is subject to change each reporting period based upon changes in the fair value of our common stock, expected volatility and the risk-free interest rate, until the outside advisor completes his or her performance under the option agreement.





## Table of Contents

A summary of our options outstanding and exercisable as of December 31, 2007 is as follows:

| Range of Exercise Prices | Options Outstanding |                                         |                                 | Options Exercisable |                                 |
|--------------------------|---------------------|-----------------------------------------|---------------------------------|---------------------|---------------------------------|
|                          | Number Outstanding  | Weighted Average Remaining Life (Years) | Weighted Average Exercise Price | Number Exercisable  | Weighted Average Exercise Price |
| \$ 1.45 \$ 5.00          | 3,210,997           | 8.3                                     | \$ 2.20                         | 641,356             | \$ 2.09                         |
| \$ 5.01 \$10.00          | 2,196,534           | 6.0                                     | 7.01                            | 1,432,935           | 7.31                            |
| \$10.01 \$15.00          | 1,336,133           | 4.0                                     | 11.90                           | 1,193,083           | 12.09                           |
| \$15.01 \$20.00          | 39,000              | 3.2                                     | 16.02                           | 38,900              | 16.02                           |
|                          | 6,782,664           |                                         | 5.75                            | 3,306,274           | 8.12                            |

The preceding table excludes 237 options assumed in our merger with Aronex Pharmaceuticals, Inc, which have a remaining life of 3.1 years and an exercise price of \$22.56 per share.

We had 5,912,850 and 6,003,608 options outstanding at December 31, 2006 and 2005, respectively, with weighted average exercise prices of \$7.17 and \$8.75, respectively.

Beginning with the year ended December 31, 2006, certain employees have been granted nonvested stock that vests over a two-year period. In accordance with SFAS No. 123R, the fair value of nonvested stock is estimated based on the closing sale price of the Company's common stock on the NASDAQ Global Market on the date of issuance.

A summary of nonvested stock activity is presented below:

|                                  | Nonvested Shares | Weighted Average Grant Date Fair Value |
|----------------------------------|------------------|----------------------------------------|
| Outstanding at December 31, 2006 | 52,670           | \$ 4.60                                |
| Granted                          | 441,929          | 1.83                                   |
| Vested                           | (17,104)         | 4.64                                   |
| Forfeited                        | (36,617)         | 2.07                                   |
| Outstanding at December 31, 2007 | 440,878          | 2.03                                   |

As of December 31, 2007, there was \$336,000 of unrecognized stock-based compensation expense related to these nonvested shares. This cost is expected to be recognized over a weighted average period of less than one year. The total intrinsic value of shares vested during the year ended December 31, 2007 was \$35,000. No shares vested during the year ended December 31, 2006.

Cash received from option exercises and purchases under the 1999 ESPP for the years ended December 31, 2007, 2006, and 2005 was \$78,000, \$469,000, and \$327,000, respectively. We issue new shares upon option exercises, purchases under the 1999 ESPP, vesting of nonvested stock, and under the Directors' Deferred Compensation Plan. During the years ended December 31, 2007, 2006, and 2005, 48,813, 66,875 shares, and 55,204 shares were issued under the 1999 ESPP, respectively. During the year ended December 31, 2007, 11,151 shares, net of 5,953 shares withheld to cover personal income tax withholding, were issued as a result of the vesting of nonvested stock. In addition, during the year ended December 31, 2007, 15,629 shares were issued under our Directors' Deferred Compensation Plan. No such shares were issued during the years ended December 31, 2006 and 2005.



**Table of Contents**

The impact on our results of operations from stock-based compensation was as follows (in thousands).

|                                        | 2007     | 2006     | 2005    |
|----------------------------------------|----------|----------|---------|
| Research and development               | \$ 892   | \$ (74)  | \$ (70) |
| General and administrative             | 2,164    | 3,111    | 33      |
| Total stock-based compensation expense | \$ 3,056 | \$ 3,037 | \$ (37) |

**(11) License, Research, and Other Agreements**

In November 1994, we entered into a Patent License Agreement with the Mount Sinai School of Medicine, or Mount Sinai (the "Mount Sinai Agreement"). Through the Mount Sinai Agreement, we obtained an exclusive worldwide license to patent rights relating to the heat shock protein technology that resulted from the research and development performed by Dr. Pramod Srivastava, our founding scientist and a former member of our Board of Directors. We agreed to pay Mount Sinai a royalty on the net sales of products covered by the licensed patent rights and also provided Mount Sinai with a 0.45% equity interest in the Company (approximately 62,000 shares valued at \$90,000 at the time of issuance). The term of the Mount Sinai Agreement ends when the last of the licensed patents expires (2018) or becomes no longer valid. If we fail to pay royalties that are due under the agreement, Mount Sinai may issue written notice to us. If we continue to fail to pay royalties after 60 days from receipt of the written notice, Mount Sinai can terminate the agreement. The Mount Sinai Agreement requires us to use due diligence to make the products covered by the licensed patent rights commercially available, including a requirement for us to use best efforts to reach a number of developmental milestones which have been achieved. If we fail to comply with the diligence provisions of the agreement, Mount Sinai could take actions to convert our exclusive license to a non-exclusive license after six months written notice. The Mount Sinai Agreement does not contain any milestone payment provisions.

During 1995, Dr. Srivastava moved his research to Fordham University ("Fordham"). We entered into a sponsored research and technology license agreement with Fordham in March 1995 (the "Fordham Agreement") relating to the continued development of the heat shock protein technology and agreed to make payments to Fordham to sponsor Dr. Srivastava's research. Through the Fordham Agreement, we obtained an exclusive, perpetual, worldwide license to all of the intellectual property, including all the patent rights that resulted from the research and development performed by Dr. Srivastava at Fordham. We also agreed to pay Fordham a royalty on the net sales of products covered by the Fordham Agreement through the last expiration date on the patents under the agreement (2018) or when the patents become no longer valid. The agreement does not contain any milestone payment provisions or any diligence provisions. Dr. Srivastava moved his research to the University of Connecticut Health Center during 1997 and, accordingly, the parts of the agreement related to payments for sponsored research at Fordham terminated in mid-1997. During the term of the agreement, we paid \$2.4 million to Fordham.

We had a research agreement with the University of Connecticut Health Center ("UConn") under which we paid UConn to sponsor research in Dr. Srivastava's laboratory (the "research agreement"). Effective December 31, 2006, this agreement was terminated, and a termination fee of \$250,000 was paid to UConn in January 2007. Research and development expense in the accompanying 2006 and 2005 consolidated statements of operations include \$1.4 million and \$1.5 million, respectively, of costs incurred under the research agreement. There was no such cost incurred in 2007.

In addition, we entered into a license agreement with UConn in May 2001 that provides us with the exclusive, worldwide rights to technologies discovered and developed under the research agreement, (the "license agreement"). The term of the license agreement ends when the last of the licensed patents expires (2019) or becomes no longer valid. UConn may terminate the license agreement: (1) if, after 30 days written notice for breach, we continue to fail to make any payments due under the license agreement, or (2) we cease to carry on our business related to the patent rights or if we initiate or conduct actions in order to declare

## **Table of Contents**

bankruptcy. We may terminate the license agreement upon 90 days written notice. The license agreement contains aggregate milestone payments of \$1.2 million for each product we develop covered by the licensed patent rights. These milestone payments are contingent upon regulatory filings, regulatory approvals and commercial sales of products. We have also agreed to pay UConn a royalty on the net sales of products covered by the license agreement as well as annual license maintenance fees. Royalties otherwise due on the net sales of products covered by the license agreement may be credited against the annual license maintenance fee obligations. To date, we have paid \$110,000 to UConn under the license agreement. The license agreement gives us complete discretion over the commercialization of products covered by the licensed patent rights, but also requires us to use commercially reasonable diligent efforts to introduce commercial products within and outside the United States. If we fail to meet these diligence requirements, UConn may be able to terminate the license agreement.

In March 2003, we entered into an amendment agreement that amended certain provisions of both the research agreement and the license agreement. The amendment agreement granted us a license to additional patent rights. In consideration for execution of the amendment agreement, we agreed to pay UConn an up front payment and to make future payments for licensed patents or patent applications. Through December 31, 2007, we have paid approximately \$100,000 to UConn under the license agreement, as amended. The termination of the research agreement did not affect our license rights under the license agreement.

We have entered into various additional research agreements with educational and medical institutions, which expired through August 2005. These agreements required initial and quarterly payments totaling approximately \$2.2 million (of which \$45,000 was paid during the year ended December 31, 2005). In addition, from time to time we have entered into, and may continue to enter into, material transfer or research agreements with institutions or commercial entities.

We have entered into various agreements with institutions and contract research organizations to conduct clinical studies. Under these agreements, subject to the enrollment of patients and performance by the institution of certain services, we have estimated our payments to be \$47.9 million over the term of the studies. For the years ended December 31, 2007, 2006, and 2005, \$1.5 million, \$3.7 million, and \$9.3 million, respectively, have been expensed in the accompanying consolidated statements of operations related to these clinical studies. Through December 31, 2007, \$44.9 million of this estimate has been paid or accrued. The timing of our expense recognition and future payments related to these agreements is dependent on the enrollment of patients and documentation received from the institutions.

In December 2000, Aronex Pharmaceuticals Inc., a company we acquired in July 2001, entered into a license agreement with Sumitomo Pharmaceuticals Co., Ltd., (the Sumitomo Agreement ). In September 2003, this agreement was amended and restated with Antigenics. The Sumitomo Agreement grants us the exclusive right to an allowed U.S. patent application that contains certain claims related to Aroplatin. Except for the treatment of hepatoma, the Sumitomo Agreement gives us the exclusive right to make, use, develop, import, and sell Aroplatin in the United States. The term of the Sumitomo Agreement ends when the licensed patent expires in 2020. Either party may terminate the Sumitomo Agreement by giving written notice to the other party upon the occurrence of the following events: (1) if the other party makes an assignment for the benefit of creditors, is the subject of bankruptcy proceedings, or has a trustee or receiver appointed for substantially all of its assets, (2) if the other party becomes insolvent, or (3) if the other party materially defaults in its performance under the Sumitomo Agreement. Prior to our acquisition of Aronex Pharmaceuticals, Inc., Sumitomo received a \$500,000 up-front payment in 2001 from Aronex Pharmaceuticals, Inc. and will receive subsequent milestone payments from us in the aggregate of up to \$3.5 million if regulatory filings, regulatory approval, and sales in connection with Aroplatin occur. We agreed to pay Sumitomo royalties on the net sales of Aroplatin in the United States upon commercialization of the product.

In June 1988, a predecessor to Aronex Pharmaceuticals, Inc. entered into an exclusive license agreement with: (1) The Board of Regents of The University of Texas System and (2) The University of Texas System Cancer Center, collectively referred to as the University of Texas . As amended, the exclusive license

## **Table of Contents**

agreement grants us the exclusive, worldwide license to the University of Texas patent rights containing claims that relate to Aroplatin. The term of the exclusive license agreement expires when the last licensed patent expires, which is anticipated to be in 2015. Either party may terminate the agreement upon 60 days written notice if the other party materially breaches any material terms of the exclusive license agreement. The agreement requires that we meet certain diligence provisions, specifically the conduct of ongoing and active research, developmental activities, marketing, clinical testing, or a licensing program, directed towards the production and sale of Aroplatin. If we fail to comply with these diligence provisions, the University of Texas may be able to terminate the exclusive license agreement upon 90 days written notice. The University of Texas also has the right to terminate the exclusive license agreement in the event that: (1) we discontinue our business, (2) we have a receiver or trustee appointed for our assets, or (3) we are the subject of a bankruptcy proceeding. We agreed to pay the University of Texas royalties on the net sales of Aroplatin. The applicable royalty percentage is dependent on the level of net sales of Aroplatin. We have also agreed to make a \$200,000 milestone payment to the University of Texas if the FDA approves a new drug application for Aroplatin. To date, we have not made any payments to the University of Texas under the exclusive license agreement.

We have various comprehensive agreements with collaborative partners that allow for the use of QS-21, an investigational adjuvant used in numerous vaccines under development for a variety of diseases including, but not limited to, hepatitis, HIV, influenza, cancer, Alzheimer's disease, malaria, and tuberculosis. These agreements grant exclusive worldwide rights in some fields of use, and co-exclusive or non-exclusive rights in others. The agreements call for royalties to be paid to us by the collaborative partner on its future sales of licensed vaccines that include QS-21.

On July 6, 2006, we entered into an expanded license agreement (the "GSK license agreement") and an expanded Manufacturing Technology Transfer and Supply Agreement (the "GSK supply agreement") with GSK for the use of QS-21, an investigational adjuvant used in numerous vaccines under development. Under the terms of the agreements, we agreed to supply QS-21 to GSK through 2014. In addition, we agreed to transfer manufacturing technologies under the GSK supply agreement. In conjunction with the GSK license agreement and the GSK supply agreement, we received a \$3.0 million up-front non-refundable payment in July 2006. In February 2007, we achieved a milestone related to the transfer of manufacturing technologies to GSK and received a payment of \$2.0 million.

On July 20, 2007, we executed a letter with GSK amending the GSK supply agreement to accelerate GSK's commercial grade QS-21 manufacturing rights previously granted in July 2006. Accordingly, from the effective date of the letter, GSK has the right to manufacture all of its requirements of commercial grade QS-21. In addition, the parties have amended their purchase and supply obligations with respect to pre-commercial grade QS-21. In accordance with the terms of the letter, upon our election, GSK is obligated to supply us (or our affiliates, licensees, or customers) certain quantities of commercial grade QS-21 for a stated period of time.

As consideration for our entering into the letter, we received a \$2.0 million up-front non-refundable payment from GSK in August 2007, in lieu of a milestone payment that would have otherwise been payable under the GSK supply agreement. In addition, GSK is obligated to make payments to us totaling \$5.25 million through December 2012, for manufacturing profits that were anticipated to have otherwise been payable under the GSK supply agreement. Except as expressly provided in the letter, all other financial obligations of GSK under the GSK supply agreement, including royalty payments, remain unchanged. The letter does not affect the rights and obligations of the parties under the July 6, 2006 GSK license agreement.

During the year ended December 31, 2007, we recognized revenue of \$2.8 million related to these payments. Deferred revenue of \$4.0 million related to our agreement with GSK is included in deferred revenue on our consolidated balance sheet as of December 31, 2007.

In 2005, Elan Corporation, plc, through its affiliate Elan Pharmaceuticals International Limited ("Elan"), initiated clinical testing of its modified Alzheimer's disease product candidate containing QS-21. In 2007, Elan initiated Phase 2 studies of the modified Alzheimer's disease product candidate that contains QS-21, and we recognized revenue of \$1.0 million for a milestone payment received from Elan based on this advancement.

## **Table of Contents**

### **(12) Certain Related Party Transactions**

We currently have QS-21 license and supply agreements with Elan for use of QS-21 with an antigen in the field of Alzheimer's disease. Garo H. Armen, Ph.D., our Chairman and Chief Executive Officer, was a director of Elan until May 2006. During the year ended December 31, 2007, we recognized revenue of \$1.0 million for a milestone payment from Elan related to the initiation of a Phase 2 study of Elan's Alzheimer's disease vaccine that contains QS-21. For the years ended December 31, 2006, and 2005, no revenues were earned under these agreements. No amounts were due to us under these agreements, as of December 31, 2007 and 2006.

In March 1995, we entered into a consulting agreement with Dr. Pramod Srivastava, our founding scientist and a former member of our Board of Directors, and upon its expiration in March 2006, we entered into a new consulting agreement (the "Agreement"), effective March 28, 2006, with Dr. Srivastava. The Agreement with Dr. Srivastava has an initial term of five years and is automatically extended for successive terms of one year unless either party notifies the other at least 90 days prior to the expiration of the original or any extension term that the Agreement is not to be extended. The Agreement may be terminated without cause by us during its term, subject to the payment of compensation for twelve months at the then current rate provided for under the Agreement. In exchange for the timely performance of services, as defined in the Agreement, Dr. Srivastava is entitled to receive compensation to be established by the Compensation Committee of the Antigenics Board of Directors. In 2005, we paid Dr. Srivastava a cash bonus of \$135,000 and granted him options to purchase 120,000 shares of our common stock for services performed in 2004. These options vest over four years and are exercisable at \$6.92 per share.

In September 2004, we entered into a \$60,000 one-year service agreement with Techsoft, Inc. d.b.a Medical Systems and NG Techsoft Pvt. Ltd. for data management services. Navin Gupta is the President and Chief Executive Officer of Techsoft, Inc. d.b.a Medical Systems and the Director and Chairman of the Board of NG Techsoft Pvt. Ltd. He also is the spouse of Renu Gupta, our former Senior Vice President of Development. This agreement was extended several times during 2005 to obtain additional data management and processing services and expired in May 2006. For the year ended December 31, 2006, we expensed \$125,000 under this agreement. At December 31, 2007, we had no amounts due under this agreement.

On October 22, 2004, we executed a letter of intent with Symphony Capital LLC for a potential transaction to provide funding for certain of our research programs. Mr. Mark Kessel, one of our former directors, is a managing director of Symphony Capital LLC. During February 2005, we determined not to pursue this potential transaction. During the year ended December 31, 2005, we paid \$196,000 to Symphony Capital LLC for activities up to termination in February 2005. Dr. Alastair Wood, another former director of ours, was a consultant to, and had a financial interest in, Symphony Capital LLC.

On January 9, 2008, we entered into a private placement agreement that included (i) 8,708,717 shares of common stock, (ii) warrants to acquire up to 8,708,717 shares of common stock at \$3.00 per share, and (iii) unit warrants, which, if exercisable due to a Triggering Event as that term is defined in the applicable warrant, permit a holder to acquire up to 8,708,717 shares of common stock at \$3.00 per share and warrants to acquire up to an additional 8,708,717 shares of common stock at \$3.00 per share. In conjunction with this private placement, we sold 542,050 shares of common stock to Garo H. Armen, Ph.D., our Chairman and Chief Executive Officer, and 1,166,667 shares of common stock to Armen Partners LP. Garo H. Armen is general partner of Armen Partners LP and owns a controlling interest therein. In addition to the common stock acquired by Garo H. Armen and Armen Partners LP, each acquired an equal number of both warrants and unit warrants.

## **Table of Contents**

### **(13) Leases**

We lease manufacturing, research and development, and office facilities under various long-term lease arrangements. Rent expense (before sublease income) included in net loss was \$3.1 million, \$3.3 million, and \$3.4 million for the years ended December 31, 2007, 2006, and 2005, respectively.

We lease a 162,000 square foot facility in Lexington, Massachusetts. We currently occupy 94,000 square feet of this facility. The future minimum rental payments under our leases of our Framingham and Lexington facilities, which expire in 2010 and 2013, respectively, and our New York City headquarters, which expires in 2012, are as follows (in thousands).

|                          |                  |
|--------------------------|------------------|
| Year ending December 31, |                  |
| 2008                     | \$ 3,053         |
| 2009                     | 3,108            |
| 2010                     | 2,915            |
| 2011                     | 2,224            |
| 2012                     | 2,140            |
| Thereafter               | 1,406            |
| <b>Total</b>             | <b>\$ 14,846</b> |

In connection with the Framingham and Lexington facilities, we maintain fully collateralized letters of credit of \$375,000 and \$1.0 million, respectively. No amounts have been drawn on the letters of credit as of December 31, 2007. In addition, for the office space in New York City, we were required to deposit \$161,000 with the landlord as an interest-bearing security deposit pursuant to our obligations under the lease.

We have subleased a portion of our Framingham facility and are contractually entitled to receive base rental payments of \$1.2 million in 2008, \$1.2 million in 2009, and \$863,000 in 2010. For the years ended December 31, 2007, 2006, and 2005, we received sublease rental payments of \$1.1 million, \$1.2 million, and \$1.1 million, respectively, with respect to our subleased facilities.

### **(14) Debt**

As of December 31, 2007, we have \$77.5 million of debt outstanding.

#### *Convertible Notes*

On October 30, 2006 (the *Issuance Date*), we issued \$25.0 million of the 2006 Notes to a group of accredited investors ( *Investors* ). These 2006 Notes bear interest at 8% (an effective rate of 8.10%) payable semi-annually on December 30 and June 30 in cash or, at our option, in additional notes or a combination thereof and mature on August 30, 2011. During the years ended December 31, 2007 and 2006, we issued additional 2006 Notes in the amount of \$2.1 million and \$333,000 respectively as payment for interest due.

The 2006 Notes are convertible into our common stock at an initial fixed conversion price of \$3.50 per share at the option of the Investors. If, prior to the maturity date of these notes, we issue or sell, or in accordance with the terms of the 2006 Notes we are deemed to have issued or sold, any shares of our common stock (including the issuance or sale of shares of our common stock owned or held by or for our account, but excluding certain excluded securities) for a consideration per share of less than \$3.00 (the *New Issuance Price*), then immediately after such issuance, the fixed conversion price then in effect shall be reduced to an amount equal to a 16.66% premium to the New Issuance Price. Alternatively, the 2006 Notes can be converted into an interest in one of our wholly-owned subsidiaries that holds the rights or patents to QS-21 and AG-707. If converted into an interest of this subsidiary, the ownership interest in the subsidiary is determined by multiplying the quotient of the conversion amount divided by \$25.0 million by 30%.

## **Table of Contents**

For purposes of determining the adjusted New Issuance Price, the following shall be applicable:

- (i) Issuance of options. If we in any manner grant or sell any options, other than options granted under the 1999 Equity Plan, and the lowest price per share for which one share of our common stock is issuable upon the exercise of any such option or upon conversion or exchange or exercise of any convertible securities issuable upon exercise of such option is less than \$3.00 per share, then such share of our common stock shall be deemed to be outstanding and to have been issued and sold by us at the time of the granting or sale of such option for such price per share.
- (ii) Issuance of convertible securities. If we in any manner issue or sell any convertible securities and the lowest price per share for which one share of our common stock is issuable upon such conversion or exchange or exercise thereof is less than \$3.00 per share, then such share of our common stock shall be deemed to be outstanding and to have been issued and sold by us at the time of the issuance or sale of such convertible securities for such price per share.
- (iii) Change in option price or rate of conversion. If the purchase price provided for in any options is changed, the additional consideration, if any, payable upon the issue, conversion, exchange, or exercise of any convertible securities, or the rate at which any convertible securities are convertible into or exchangeable or exercisable for our common stock changes at any time, the fixed conversion price in effect at the time of such change shall be adjusted to the fixed conversion price which would have been in effect at such time had such options or convertible securities provided for such changed purchase price, additional consideration, or changed conversion rate, as the case may be, at the time initially granted, issued, or sold.

At any time after October 30, 2009, we may call the 2006 Notes and accrued interest at face value for cash if our shares have a minimum average trading price during the prior 30-day period of \$7.00 or higher. Such redemption shall not be effective until the 20th business day following notice from us, during which period the Investors may elect to exercise their conversion rights. If the Investors elect at any time to convert the 2006 Notes into ownership of the subsidiary holding the rights or patents to QS-21 and AG-707, we also have the right, within 30 days, to redeem the 2006 Notes, including accrued interest, at a redemption price providing a 30-percent internal rate of return to the Investors. The 2006 Notes are secured by our equity ownership in this subsidiary.

Upon the maturity of the 2006 Notes, we may elect to repay the outstanding balance in cash or in common stock, subject to certain limitations. If we elect to satisfy the outstanding balance with common shares at maturity, the number of shares issued will be determined by dividing the cash obligation by 90 percent of the average closing price of the common shares for the 20 trading days preceding the maturity date of the 2006 Notes. This right is subject to our market capitalization exceeding \$300 million at such time.

In no event will any Investor be obligated to accept equity that would result in an Investor owning in excess of 9.99% of the Company's outstanding common stock at any given time in connection with any conversion, redemption, or repayment of the 2006 Notes. The note agreements include material restrictions on the Company's incurrence of debt and liens while the 2006 Notes are outstanding, as well as other customary covenants. The note agreements also include a change of control provision whereby the holders of the 2006 Notes may require us to redeem all or a portion of the then outstanding 2006 Notes at a price equal to 101% of the conversion amount being redeemed and a right of first refusal provision for the holders of the 2006 Notes on any sales of equity of the subsidiary holding the rights or patents to QS-21 and AG-707, to purchase up to 50% of such sales of equity on the same terms as the third-party purchaser.

If we at any time on or after the Issuance Date subdivide (by any stock split, stock dividend, recapitalization, or otherwise) one or more classes of our outstanding shares of common stock into a greater number of shares, the fixed conversion price in effect immediately prior to such subdivision will be proportionately reduced. If we at any time on or after the Issuance Date combine (by combination, reverse stock



## **Table of Contents**

split, or otherwise) one or more classes of our outstanding shares of common stock into a smaller number of shares, the fixed conversion price in effect immediately prior to such combination will be proportionately increased.

If any event occurs of the type contemplated above but not expressly provided for by such provisions (including, without limitation, the granting of stock appreciation rights, phantom stock rights, or other rights with equity features), then our Board of Directors will make an appropriate adjustment in the fixed conversion price then in effect so as to protect the rights of the holders of the 2006 Notes; provided that no such adjustment will increase the fixed conversion price then in effect as otherwise determined.

The fair value of the 2006 Notes is estimated to be \$22.8 million at December 31, 2007.

On January 25, 2005, we issued \$50.0 million of convertible senior notes in a private placement (the 2005 Notes). Proceeds from the sale of the 2005 Notes were approximately \$48.0 million net of issuance costs. Issuance costs are being amortized using the effective interest method over seven years, the expected life of the 2005 Notes based on the earliest date on which the holders can require redemption. The 2005 Notes, which mature in 2025, bear interest payable semi-annually on February 1 and August 1 of each year, at a rate of 5.25% per annum (an effective rate of 5.94%) and are convertible into common stock at an initial conversion price of \$10.76 per share.

Subject to the terms of the indenture, this conversion rate may be adjusted for:

dividends or distributions payable in shares of our common stock to all holders of our common stock or,

subdivisions, combinations, or certain reclassifications of our common stock, by multiplying the conversion rate in effect before such event by the number of shares a person holding a single common share would own after such event.

The conversion rate may also be adjusted for:

distributions to all or substantially all holders of our common stock of certain rights or warrants (other than, as described below, certain rights distributed pursuant to a stockholder rights plan) entitling them, for a period expiring not more than 60 days immediately following the record date for the distribution, to purchase or subscribe for shares of our common stock, or securities convertible into or exchangeable or exercisable for shares of our common stock, at a price per share, or having a conversion price per share, that is less than the current market price (as defined in the indenture) per share of our common stock on the record date for the distribution, by multiplying the conversion rate in effect before such event by a fraction whose numerator is the sum of the number of common shares outstanding before the event and the number of shares underlying the rights or warrants and whose denominator is the sum of the number of common shares outstanding before the event and the number of shares of common stock that could be purchased at market price with the aggregate dollar amount of the underlying shares at the below-market price (however, we will not adjust the conversion rate pursuant to this provision for distributions of certain rights or warrants, if we make certain arrangements for holders of the 2005 Notes to receive those rights and warrants upon conversion of the 2005 Notes);

dividends or other distributions to all or substantially all holders of our common stock of shares of our capital stock (other than our common stock), evidences of indebtedness, or other assets (other than dividends or distributions covered by the bullet points below) or the dividend or distribution to all or substantially all holders of our common stock of certain rights or warrants (other than those covered above or, as described below, certain rights or warrants distributed pursuant to a stockholder rights plan) to purchase or subscribe for our securities, by multiplying the conversion rate in effect before such event by a fraction whose numerator is the current market price of the stock and whose denominator is that price less the fair market value of the dividend or distributed instrument

## **Table of Contents**

attributable to one share of common stock as determined in good faith by the Board of Directors (if the denominator is less than or equal to zero, then provision will be made for noteholders to receive upon conversion an amount of such instrument as they would have received had they converted all of their securities on the record date);

cash dividends or other cash distributions by us to all or substantially all holders of our common stock, other than distributions described in the immediately following bullet point, by multiplying the conversion rate in effect immediately before the close of business on the record date for the cash distribution by a fraction whose numerator is the current market price per share of our common stock on the record date and whose denominator is that current market price less the per share amount of the distribution. However, we will not adjust the conversion rate pursuant to this provision to the extent that the adjustment would reduce the conversion price below \$0.01; and

distributions of cash or other consideration by us or any of our subsidiaries in respect of a tender offer or exchange offer for our common stock, where such cash and the value of any such other consideration per share of our common stock validly tendered or exchanged exceeds the current market price per share of our common stock on the last date on which tenders or exchanges may be made pursuant to the tender or exchange offer, by multiplying the conversion rate then in effect by a fraction whose numerator is equal to the sum of the aggregate amount of cash distributed and the aggregate fair market value as determined by the Board of Directors of the other consideration distributed and the product of the current market price per share of common stock and the number of shares of common stock outstanding at the last time at which tenders or exchanges could have been made, less the shares validly tendered or exchanged, and whose denominator is the product of the number of shares of common stock outstanding and the current market price of the stock.

If we issue rights, options, or warrants that are only exercisable upon the occurrence of certain triggering events, then:

we will not adjust the conversion rate pursuant to the bullet points above until the earliest of these triggering events occurs; and

we will readjust the conversion rate to the extent any of these rights, options, or warrants are not exercised before they expire. The indenture does not require us to adjust the conversion rate for any of the transactions described in the bullet points above if we make provision for holders of the 2005 Notes to participate in the transaction without conversion on a basis and with notice that our Board of Directors determines in good faith to be fair and appropriate, as provided in the indenture. The indenture also does not require us to make any adjustments to the conversion rate for any dividends or distributions solely on our preferred stock.

We will not adjust the conversion rate pursuant to the bullet points above unless the adjustment would result in a change of at least 1% in the then effective conversion rate. However, we will carry forward any adjustment that we would otherwise have to make and take that adjustment into account in any subsequent adjustment.

To the extent permitted by law and the continued listing requirements of the NASDAQ Global Market, we may, from time to time, increase the conversion rate by any amount for a period of at least 20 days or any longer period permitted by law, so long as the increase is irrevocable during that period and our Board of Directors determines that the increase is in our best interests. In addition, we may also increase the conversion rate as we determine to be advisable in order to avoid or diminish any income taxes to holders of our common stock resulting from certain distributions.

On conversion, the holders of the 2005 Notes will receive, in addition to shares of our common stock and any cash for fractional shares, the rights under any future stockholder rights plan (i.e., a poison pill) we may establish, whether or not the rights are separated from our common stock prior to conversion. A distribution of

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**Table of Contents**

rights pursuant to such a stockholder rights plan will not trigger a conversion rate adjustment so long as we have made proper provision to provide that holders will receive such rights upon conversion in accordance with the terms of the indenture.

The 2005 Notes surrendered for conversion in connection with certain fundamental changes, as defined, that occur before February 1, 2012 may in certain circumstances be entitled to an increase in the conversion rate per \$1,000 principal amount of the 2005 Notes.

A fundamental change generally will be deemed to occur upon the occurrence of a change in control or a termination of trading.

A change in control generally will be deemed to occur at such time as:

any person or group (as these terms are used for purposes of Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, or the Securities Exchange Act), other than us, any of our subsidiaries, or any of our employee benefit plans, is or becomes the beneficial owner (as that term is used in Rule 13d-3 under the Securities Exchange Act), directly or indirectly, of 50% or more of the total voting power of all classes of our capital stock entitled to vote generally in the election of directors ( voting stock );

there occurs a sale, transfer, lease, conveyance, or other disposition of all or substantially all of our property or assets to any person or group (as those terms are used in Sections 13(d) and 14(d) of the Securities Exchange Act), including any group acting for the purpose of acquiring, holding, voting, or disposing of securities within the meaning of Rule 13d-5(b)(1) under the Securities Exchange Act;

we consolidate with, or merge with or into, another person or any person consolidates with, or merges with or into, us, unless either:

(i) the persons that beneficially owned, directly or indirectly, the shares of our voting stock immediately prior to such consolidation or merger, beneficially own, directly or indirectly, immediately after such consolidation or merger, shares of the surviving or continuing corporation's voting stock representing at least a majority of the total voting power of all outstanding classes of voting stock of the surviving or continuing corporation in substantially the same proportion as such ownership immediately prior to the transaction; or

(ii) both of the following conditions are satisfied:

at least 90% of the consideration (other than cash payments for fractional shares or pursuant to statutory appraisal rights) in such consolidation or merger consists of common stock and any associated rights traded on a U.S. national securities exchange or quoted on the NASDAQ Global Market (or which will be so traded or quoted when issued or exchanged in connection with such consolidation or merger); and

as a result of such consolidation or merger, the 2005 Notes become convertible solely into such common stock, associated rights, and cash for fractional shares;

the following persons cease for any reason to constitute a majority of our Board of Directors:

(i) individuals who on the first issue date of the 2005 Notes constituted our Board of Directors; and

(ii) any new directors whose election to our Board of Directors or whose nomination for election by our stockholders was approved by at least a majority of our directors then still in office either who were directors on such first issue date of the 2005 Notes or whose election or nomination for election was previously so approved; or

we are liquidated or dissolved or holders of our capital stock approve any plan or proposal for our liquidation or dissolution.

## **Table of Contents**

A termination of trading is deemed to occur if our common stock (or other common stock into which the 2005 Notes are then convertible) is neither listed for trading on a U.S. national securities exchange nor approved for trading on an established automated over-the-counter trading market in the United States.

If:

a fundamental change, as described under the first, second, or third bullet point of the description of change in control occurs before February 1, 2012; and

at least 10% of the consideration (excluding cash payments for fractional shares or pursuant to statutory appraisal rights) for our common stock in the fundamental change consists of any combination of cash or securities (or other property) that are not traded on a U.S. national securities exchange or quoted on the NASDAQ Global Market (and are not scheduled to be so traded or quoted immediately after the fundamental change), then we will increase the conversion rate applicable to the 2005 Notes that are surrendered for conversion at any time from, and including, the 15th business day before the date we originally announce as the anticipated effective date of the fundamental change until, and including, the 15th business day after the actual effective date of the fundamental change.

We refer to such a fundamental change as a make-whole fundamental change. However, if the make-whole fundamental change is a public acquirer fundamental change, as described below, then, in lieu of increasing the conversion rate as described above, we may elect to change the conversion right in the manner described below.

If a holder surrenders a note for conversion in connection with a make-whole fundamental change we have announced, but the make-whole fundamental change is not consummated, the holder will not be entitled to any increased conversion rate in connection with the conversion.

In connection with a make-whole fundamental change, we will increase the conversion rate, based on the date when the make-whole fundamental change becomes effective, which we refer to as the effective date, and the applicable price. If the consideration (excluding cash payments for fractional shares or pursuant to statutory appraisal rights) for our common stock in the make-whole fundamental change consists solely of cash, then the applicable price will be the cash amount paid per share of our common stock in the make-whole fundamental change. Otherwise, the applicable price will be the average of the closing sale prices (as defined in the indenture) per share of our common stock for the five consecutive trading days immediately preceding the effective date. Our Board of Directors will make appropriate adjustments, in its good faith determination, to account for any adjustment to the conversion rate that becomes effective, or any event requiring an adjustment to the conversion rate where the ex date of the event occurs, at any time during those five consecutive trading days.

If an event occurs that requires an adjustment to the conversion rate, we will, on the date we must adjust the conversion rate, adjust each applicable price by multiplying the applicable price in effect immediately before the adjustment by a fraction:

whose numerator is the conversion rate in effect immediately before the adjustment; and

whose denominator is the adjusted conversion rate.

In addition, we will adjust the number of additional shares in accordance with a table in the indenture, based on the price per share of our common stock, and the timing of a fundamental change. As of December 31, 2007, the Company could issue between 0 and 39.53 additional shares per \$1,000 principal amount of the 2005 Notes (representing up to 1,980,000 additional shares) in the event of a fundamental change. The number of additional shares is based on a closing sale price of \$8.97 per share of our common stock on January 19, 2005 and certain pricing assumptions. If the actual applicable price is greater than \$52.50 per share (subject to adjustment) or less than \$8.97 per share (subject to adjustment), we will not increase the conversion rate.

## **Table of Contents**

However, certain continued listing standards of the NASDAQ Global Market potentially limit the amount by which we may increase the conversion rate. These standards generally require us to obtain the approval of our stockholders before entering into certain transactions that potentially result in the issuance of 20% or more of our outstanding common stock. Accordingly, we will not increase the conversion rate as described above beyond the maximum level permitted by these continued listing standards. We will make any such reduction in the increase to the conversion rate in good faith and, to the extent practical, pro rata in accordance with the principal amount of the 2005 Notes surrendered for conversion in connection with the make-whole fundamental change. In accordance with these listing standards, these restrictions will apply at any time when the 2005 Notes are outstanding, regardless of whether we then have a class of securities quoted on the NASDAQ Global Market.

If the make-whole fundamental change is a public acquirer fundamental change, as described below, then we may elect to change the conversion right in lieu of increasing the conversion rate applicable to the 2005 Notes that are converted in connection with that public acquirer fundamental change. If we make this election, then we will adjust the conversion rate and our related conversion obligation such that, from and after the effective time of the public acquirer fundamental change, the right to convert a note into shares of our common stock will be changed into a right to convert it into shares of public acquirer common stock, as described below, at a conversion rate equal to the conversion rate in effect immediately before the effective time multiplied by a fraction:

whose numerator is:

(i) if the public acquirer fundamental change is a share exchange, consolidation, merger, or binding share exchange pursuant to which our common stock is converted into cash, securities, or other property, the fair market value (as determined in good faith by our Board of Directors), as of the effective time of the public acquirer fundamental change, of the cash, securities, and other property paid or payable per share of our common stock; or

(ii) in the case of any other public acquirer fundamental change, the average of the closing sale prices (as defined in the indenture) per share of our common stock for the five consecutive trading days before, and excluding, the effective date of the public acquirer fundamental change (subject to certain adjustments to be made in good faith by our Board of Directors); and

whose denominator is the average of the last reported sale prices per share of the public acquirer common stock for the five consecutive trading days commencing on, and including, the trading day immediately after the effective date of the public acquirer fundamental change (subject to certain adjustments to be made in good faith by our Board of Directors).

If we elect to change the conversion right as described above, the change in the conversion right will apply to all holders from and after the effective time of the public acquirer fundamental change, and not just those holders, if any, that convert their 2005 Notes in connection with the public acquirer fundamental change.

A public acquirer fundamental change generally means an acquisition of us pursuant to a change of control described in the first, second, or third bullet point under the description of change in control (see above) where the acquirer (or any entity that is a direct or indirect wholly-owned subsidiary of the acquirer) has a class of common stock that is traded on a national securities exchange or quoted on the NASDAQ Global Market or that will be so traded or quoted when issued or exchanged in connection with the change in control. We refer to such common stock as the public acquirer common stock.

On or after February 1, 2012, we may redeem the 2005 Notes for cash, at a redemption price equal to 100% of the principal amount of the 2005 Notes, plus any accrued and unpaid interest. On each of February 1, 2012, February 1, 2015 and February 1, 2020, holders may require us to purchase their 2005 Notes for cash equal to 100% of the principal amount of the 2005 Notes, plus any accrued and unpaid interest. Holders may also require us to repurchase their 2005 Notes upon a fundamental change, as defined above, at a repurchase price,

## **Table of Contents**

in cash, equal to 100% of the principal amount of the 2005 Notes to be repurchased, plus any accrued and unpaid interest. The 2005 Notes are senior unsecured obligations of Antigenics and rank equally with all of our existing and future senior unsecured indebtedness. The 2005 Notes are effectively subordinated to all of our existing and future secured indebtedness and all existing and future liabilities of our subsidiaries. The 2005 Notes do not contain any financial covenants and do not limit our ability to incur additional indebtedness, including senior or secured indebtedness, issue securities, pay dividends, or repurchase our securities. We were obligated until January 25, 2007 to keep effective a shelf registration statement with the SEC for resale of the 2005 Notes and the shares of common stock issuable upon conversion of the 2005 Notes by the holders thereof. Failure to do so could have resulted in an obligation to pay additional interest to each holder of registrable securities who was affected.

The fair value of the 2005 Notes is estimated to be \$37.5 million at December 31, 2007 based on trader quotes.

Under SFAS No. 133, the conversion features of our convertible notes are essentially call options on our stock. Because the options are indexed to our own stock and a separate instrument with the same terms would be classified in stockholders' (deficit) equity in our consolidated balance sheet, the options are not considered to be derivative instruments and should not be separated from the host contracts. Accordingly, the conversion features of these convertible notes are not bifurcated from either of the notes.

### *Other*

At December 31, 2007, approximately \$146,000 of debentures we assumed in our merger with Aquila Biopharmaceuticals are outstanding. These debentures carry interest at 7% and are callable by the holders. Accordingly they are classified as part of the current portion of long-term debt.

## **(15) Contingencies**

Antigenics, our Chairman and Chief Executive Officer, Garo H. Armen, Ph.D., and two investment banking firms that served as underwriters in our initial public offering have been named as defendants in a civil class action lawsuit filed on November 5, 2001 in the Federal District Court for the Southern District of New York on behalf of a class of purchasers of our stock between February 3, 2000 and December 6, 2000. Similar complaints were filed against about 300 other issuers, their underwriters, and in many instances their directors and officers. These cases have been coordinated under the caption *In re Initial Public Offering Securities Litigation*, Civ. No. 21 MC 92 (SAS), by order dated August 9, 2001. The suit against Antigenics and Dr. Armen alleges that the brokerage arms of the investment banking firms charged secret excessive commissions to certain of their customers in return for allocations of our stock in the offering. The suit also alleges that shares of our stock were allocated to certain of the investment banking firms' customers based upon agreements by such customers to purchase additional shares of our stock in the secondary market. The complaint alleges that Antigenics is liable under Section 11 of the Securities Act of 1933, as amended (the Securities Act), and Dr. Armen is liable under Sections 11 and 15 of the Securities Act because our registration statement did not disclose these alleged practices. On April 19, 2002, the plaintiffs in this action filed an amended class action complaint, which contains new allegations. Again, similar amended complaints were filed with respect to the other companies. In addition to the claims in the earlier complaint, the amended complaint alleges that Antigenics and Dr. Armen violated Sections 10(b) and 20 of the Securities Exchange Act and SEC Rule 10b-5 by making false and misleading statements and/or omissions in order to inflate our stock price and conceal the investment banking firms' alleged secret arrangements. The claims against Dr. Armen, in his individual capacity, have been dismissed without prejudice. On July 15, 2002, Antigenics and Dr. Armen joined the Issuer Defendants' Motion to Dismiss the Consolidated Amended Complaints. By order of the court, this motion set forth all common issues (i.e., all grounds for dismissal common to all or a significant number of Issuer Defendants). The hearing on the Issuer Defendants' Motion to Dismiss and the other Defendants' motions to dismiss was held on November 1, 2002. On February 19, 2003, the court issued its opinion and order on the Issuer Defendants' Motion to Dismiss. The court

## **Table of Contents**

granted Antigenics' motion to dismiss the Rule 10b-5 and Section 20 claims with leave to amend and denied our motion to dismiss the Section 11 and Section 15 claims. On June 14, 2004, papers formalizing a proposed settlement among the plaintiffs, Issuer Defendants, and insurers were presented to the Federal District Court for the Southern District of New York. On February 15, 2005, the court granted preliminary approval of the settlement. On August 31, 2005, the court issued an order confirming preliminary approval of the settlement. The settlement remained subject to a number of conditions, including final court approval. In December 2006, the appellate court overturned the certification of classes in the six test cases that were selected by the underwriter defendants and plaintiffs in the coordinated proceedings. Class certification was one of the conditions of the settlement. Accordingly, on June 25, 2007, the court entered an order terminating the proposed settlement based on a stipulation among the parties to the settlement. It is uncertain whether there will be any revised or future settlement. To date, the plaintiffs have not asserted a specific amount of damages and, at this time, we cannot make a reliable estimate of possible loss, if any, related to this litigation. Accordingly, no accrual has been recorded at December 31, 2007.

On October 12, 2005, a third party filed a notice of opposition in the European Patent Office to European patent EP 0750513 B1 which has claims relating to AG-702/707 and to which we hold the exclusive license. On January 21, 2008, the opposition division of the European Patent Office issued its decision revoking the patent. This decision may be appealed by March 21. For strategic reasons, we have decided not to appeal this decision.

We currently are a party, or may become a party, to other legal proceedings as well. While we currently believe that the ultimate outcome of any of these proceedings will not have a material adverse effect on our financial position, results of operations, or liquidity, litigation is subject to inherent uncertainty. Furthermore, litigation consumes both cash and management attention.

### **(16) 401(k) Plan**

We sponsor a defined contribution 401(k) savings plan for all eligible employees, as defined. Participants may contribute up to 60% of their compensation, as defined, with a maximum of \$15,500 for individuals under 50 years old and \$20,500 for individuals 50 years old and older in 2007. Each participant is fully vested in his or her contributions and related earnings and losses. The Company matches 50% of the participant's contribution, subject to a maximum of 6% of compensation. Such matching contributions vest over four years. For the years ended December 31, 2007, 2006, and 2005, we expensed \$176,000, \$213,000, and \$534,000 for the Company's contributions to the 401(k) plan.

### **(17) Restructuring Costs**

In June 2005, we took steps to improve our operating efficiency through the prioritization of our development portfolio and a streamlining of our infrastructure. These steps resulted in the recording of restructuring charges of \$606,000. In December 2005, we further updated our business strategy and refocused our programs and priorities, including the postponement and deceleration of a number of our projects. These actions resulted in additional charges of \$990,000 being recorded in December 2005 and \$112,000 being recorded during the quarter ended March 31, 2006. In April 2006, we commenced the implementation of a plan to further restructure, refocusing our programs and priorities with the goal of reducing our net cash burn (cash used in operating activities plus capital expenditures, debt repayments, and dividend payments). We recorded charges of \$645,000 at that time, resulting in total charges of \$757,000 for the year ended December 31, 2006. These actions resulted in a combined total headcount reduction of 133 positions.

During 2006, we also wrote-off certain assets that were determined to not be required for our updated business strategy. This resulted in impairment charges of \$617,000.



**Table of Contents****(18) Quarterly Financial Data (Unaudited)**

|                                              | March 31, | Quarter Ended,<br>June 30, September 30, |           | December 31, |
|----------------------------------------------|-----------|------------------------------------------|-----------|--------------|
|                                              |           | (In thousands, except per share data)    |           |              |
| <b>2007</b>                                  |           |                                          |           |              |
| Revenue                                      | \$ 2,353  | \$ 1,443                                 | \$ 863    | \$ 893       |
| Net loss                                     | (8,696)   | (9,853)                                  | (10,786)  | (7,460)      |
| Net loss attributable to common stockholders | (8,894)   | (10,050)                                 | (10,984)  | (7,658)      |
| Per common share, basic and diluted:         |           |                                          |           |              |
| Net loss attributable to common stockholders | \$ (0.19) | \$ (0.22)                                | \$ (0.24) | \$ (0.16)    |

|                                              | March 31, | Quarter Ended,<br>June 30, September 30, |           | December 31, |
|----------------------------------------------|-----------|------------------------------------------|-----------|--------------|
|                                              |           | (In thousands, except per share data)    |           |              |
| 2006                                         |           |                                          |           |              |
| Revenue                                      | \$ 60     | \$ 96                                    | \$ 216    | \$ 320       |
| Net loss                                     | (15,234)  | (14,088)                                 | (11,022)  | (11,537)     |
| Net loss attributable to common stockholders | (15,432)  | (14,286)                                 | (11,219)  | (11,734)     |
| Per common share, basic and diluted:         |           |                                          |           |              |
| Net loss attributable to common stockholders | \$ (0.34) | \$ (0.31)                                | \$ (0.24) | \$ (0.26)    |

**(19) Subsequent Event**

On January 9, 2008, we entered into a private placement agreement under which we issued and sold (i) 8,708,717 shares of common stock, (ii) warrants to acquire up to 8,708,717 shares of common stock at \$3.00 per share, and (iii) unit warrants, which, if exercisable due to a Triggering Event as that term is defined in the applicable warrant, permit a holder to acquire up to 8,708,717 shares of common stock at \$3.00 per share and warrants to acquire up to an additional 8,708,717 shares of common stock at \$3.00 per share. We raised net proceeds in this private placement of \$25.8 million, after deducting offering costs of \$296,000.

## **Table of Contents**

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

Not applicable.

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

#### **Conclusion Regarding the Effectiveness of Disclosure Controls and Procedures**

Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we conducted an evaluation of the effectiveness of our disclosure controls and procedures, as such term is defined under Rule 13a-15(e) promulgated under the Securities Exchange Act. Based on this evaluation, our Chief Executive Officer and our Chief Financial Officer concluded that our disclosure controls and procedures were functioning effectively as of the end of the period covered by this Annual Report on Form 10-K to provide reasonable assurance that the Company can meet its disclosure obligations.

#### **Management's Report on Internal Control Over Financial Reporting**

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Securities Exchange Act Rule 13a-15(f). Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in *Internal Control - Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on our evaluation under the framework, our management concluded that our internal control over financial reporting was effective as of December 31, 2007.

KPMG LLP, our independent registered public accounting firm, has issued their report, included herein, on the effectiveness of our internal control over financial reporting.

#### **Changes in Internal Control Over Financial Reporting**

There were no changes in our internal control over financial reporting that occurred during the fourth quarter of 2007 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

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**Table of Contents**

**Report of Independent Registered Public Accounting Firm**

The Board of Directors and Stockholders

Antigenics Inc.:

We have audited Antigenics Inc.'s internal control over financial reporting as of December 31, 2007, based on criteria established in *Internal Control – Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Antigenics Inc.'s management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying *Management's Report on Internal Control Over Financial Reporting*. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

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

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, Antigenics Inc. maintained, in all material respects, effective internal control over financial reporting as of December 31, 2007, based on criteria established in *Internal Control – Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of Antigenics Inc. and subsidiaries as of December 31, 2007 and 2006, and the related consolidated statements of operations, stockholders' (deficit) equity and comprehensive loss, and cash flows for each of the years in the three-year period ended December 31, 2007, and our report dated March 14, 2008 expressed an unqualified opinion on those consolidated financial statements.

/s/ KPMG LLP

Boston, Massachusetts

March 14, 2008

**Table of Contents**

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

None.

**PART III**

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

The response to this item is incorporated by reference from Executive Officers of the Registrant found in Part I of this Annual Report on Form 10-K, following Item 4 of this Annual Report on Form 10-K, and from sections entitled Proposal 1 Election of Directors, Our Corporate Governance and Section 16(a) Beneficial Ownership Reporting Compliance in our Proxy Statement relating to our 2008 Annual Meeting of Stockholders scheduled for June 4, 2008.

**Item 11. *Executive Compensation***

The response to this item is incorporated by reference into this Annual Report on Form 10-K from sections entitled Our Corporate Governance, Compensation Discussion and Analysis, Compensation Committee Report, Compensation of Executive Officers and Director Compensation in our Proxy Statement relating to our 2008 Annual Meeting of Stockholders scheduled for June 4, 2008.

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

The response to this item is incorporated by reference into this Annual Report on Form 10-K from sections entitled Equity Plans and Ownership of Our Common Stock in our Proxy Statement relating to our 2008 Annual Meeting of Stockholders scheduled for June 4, 2008.

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

The response to this item is incorporated by reference into this Annual Report on Form 10-K from the sections entitled Our Corporate Governance and Certain Relationships and Related Transactions in our Proxy Statement relating to our 2008 Annual Meeting of Stockholders scheduled for June 4, 2008.

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

The response to this item is incorporated by reference into this Annual Report on Form 10-K from the section entitled Proposal 3 Ratify the Appointment of KPMG LLP as our Independent Registered Public Accounting Firm for the Fiscal Year Ending December 31, 2008 in our Proxy Statement relating to our 2008 Annual Meeting of Stockholders scheduled for June 4, 2008.

**Table of Contents**

**PART IV**

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

(a) 1. *Consolidated Financial Statements*

The consolidated financial statements are listed under Item 8 of this Annual Report on Form 10-K.

2. *Consolidated Financial Statement Schedules*

The consolidated financial statement schedules required under this Item and Item 8 are omitted because they are not applicable or the required information is shown in the consolidated financial statements or the footnotes thereto.

3. *Exhibits*

The exhibits are listed below under Part IV Item 15(b).

(b) Exhibits

**Exhibit Index**

| <b>Exhibit No.</b> | <b>Description</b>                                                                                                                                                                                                                                                                                                                           |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.1                | Placement Agent Agreement dated August 31, 2007 by and between Antigenics Inc. and Wm Smith Securities. Filed as Exhibit 1.1 to our Current Report on Form 8-K (File No. 0-29089) dated August 31, 2007 and incorporated herein by reference.                                                                                                |
| 3.1                | Amended and Restated Certificate of Incorporation of Antigenics. Filed as Exhibit 3.1 to our Current Report on Form 8-K (File No. 0-29089) dated June 10, 2002 and incorporated herein by reference.                                                                                                                                         |
| 3.1.1              | Certificate of Amendment to the Amended and Restated Certificate of Incorporation of Antigenics Inc. Filed as Exhibit 3.1 to our Current Report on Form 8-K (File No. 0-29089) dated June 11, 2007 and incorporated herein by reference.                                                                                                     |
| 3.2                | Second Amended and Restated By-laws of Antigenics Inc. Filed as Exhibit 3.2 to our Current Report on Form 8-K (File No. 0-29089) dated December 17, 2007 and incorporated herein by reference.                                                                                                                                               |
| 3.3                | Certificate of Designation, Preferences and Rights of the Series A Convertible Preferred Stock of Antigenics Inc. filed with the Secretary of State of the State of Delaware on September 24, 2003. Filed as Exhibit 3.1 to our Current Report on Form 8-K (File No. 0-29089) dated September 25, 2003 and incorporated herein by reference. |
| 3.4                | Certificate of Designations, Preferences and Rights of the Class B Convertible Preferred Stock of Antigenics Inc. Filed as Exhibit 3.1 to our Current Report on Form 8-K (File No. 0-29089) dated August 31, 2007 and incorporated herein by reference.                                                                                      |
| 4.1                | Form of Common Stock Certificate. Filed as Exhibit 4.1 to our registration statement on Form S-1 (File No. 333-91747) and incorporated herein by reference.                                                                                                                                                                                  |
| 4.2                | Registration Rights Agreement dated August 2, 1989 by and among Aronex Pharmaceuticals, Inc. and certain of its stockholders. Filed as Exhibit 10.1 to the registration statement on Form S-1 (File No. 333-47418) of Aronex Pharmaceuticals, Inc. and incorporated herein by reference.                                                     |
| 4.3                | First Amendment to Registration Rights Agreement dated April 18, 1990, by and among Aronex Pharmaceuticals, Inc. and certain of its stockholders. Filed as Exhibit 10.2 to the registration statement on Form S-1 (File No. 333-47418) of Aronex Pharmaceuticals, Inc. and incorporated herein by reference.                                 |



**Table of Contents**

| <b>Exhibit No.</b> | <b>Description</b>                                                                                                                                                                                                                                                                                                                            |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.4                | Second Amendment to Registration Rights Agreement dated October 31, 1991, by and among Aronex Pharmaceuticals, Inc. and certain of its stockholders. Filed as Exhibit 10.3 to the registration statement on Form S-1 (File No. 333-47418) of Aronex Pharmaceuticals, Inc. and incorporated herein by reference.                               |
| 4.5                | Third Amendment to Registration Rights Agreement, dated September 10, 1993, among Aronex Pharmaceuticals, Inc. and certain of its stockholders. Filed as Exhibit 10.4 to the registration statement on Form S-1 (File No. 333-71166) of Aronex Pharmaceuticals, Inc. and incorporated herein by reference.                                    |
| 4.6                | Fourth Amendment to Registration Rights Agreement dated January 20, 1994, among Aronex Pharmaceuticals and certain of its stockholders. Filed as Exhibit 10.5 to the Annual Report on Form 10-K/A for the year ended December 31, 1999 (File No. 0-20111) of Aronex Pharmaceuticals, Inc. and incorporated herein by reference.               |
| 4.7                | Indenture, dated January 25, 2005, between the Registrant and HSBC Bank USA, National Association. Filed as Exhibit 4.1 to our Current Report on Form 8-K (File No. 0-29089) dated January 25, 2005 and incorporated herein by reference.                                                                                                     |
| 4.8                | Registration Rights Agreement, dated January 25, 2005, between the Registrant and the initial purchasers. Filed as Exhibit 4.2 to our Current Report on Form 8-K (File No. 0-29089) dated January 25, 2005 and incorporated herein by reference.                                                                                              |
| 4.9                | Form of Note under the Securities Purchase Agreement dated as of October 30, 2006 by and among Antigenics Inc., a Delaware corporation and the investors listed on the Schedule of Buyers thereto. Filed as Exhibit 4.1 to our Current Report on Form 8-K (File No. 0-29089) dated October 31, 2006 and incorporated herein by reference.     |
| 4.10               | Form of PIK Note under the Securities Purchase Agreement dated as of October 30, 2006 by and among Antigenics Inc., a Delaware corporation and the investors listed on the Schedule of Buyers thereto. Filed as Exhibit 4.2 to our Current Report on Form 8-K (File No. 0-29089) dated October 31, 2006 and incorporated herein by reference. |
| 4.11               | Pledge of Security Agreement dated as of October 30, 2006 by and among Antigenics Inc., a Delaware corporation and the investors listed on the Schedule of Buyers thereto. Filed as Exhibit 4.3 to our Current Report on Form 8-K (File No. 0-29089) dated October 31, 2006 and incorporated herein by reference.                             |
| 4.12               | Guaranty dated as of October 30, 2006 by and between Antigenics Inc., a Massachusetts corporation and Ingalls & Snyder LLC, as Collateral Agent for the Buyers. Filed as Exhibit 4.4 to our Current Report on Form 8-K (File No. 0-29089) dated October 31, 2006 and incorporated herein by reference.                                        |
| 4.13               | Guaranty dated as of October 30, 2006 by and between Aronex Pharmaceuticals, Inc. and Ingalls & Snyder LLC, as Collateral Agent for the Buyers. Filed as Exhibit 4.5 to our Current Report on Form 8-K (File No. 0-29089) dated October 31, 2006 and incorporated herein by reference.                                                        |
| 4.14               | Securities Purchase Agreement dated as of October 30, 2006 by and among Antigenics Inc., a Delaware corporation and the investors listed on the Schedule of Buyers thereto. Filed as Exhibit 4.6 to our Current Report on Form 8-K (File No. 0-29089) dated October 31, 2006 and incorporated herein by reference.                            |
| 4.15               | Form of Warrant under the Securities Purchase Agreement dated January 9, 2008. Filed as Exhibit 4.1 to our Current Report on Form 8-K (File No. 0-29089) dated January 9, 2008 and incorporated herein by reference.                                                                                                                          |

## **Table of Contents**

| <b>Exhibit No.</b> | <b>Description</b>                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.16               | Form of Contingent Warrant under the Securities Purchase Agreement dated January 9, 2008. Filed as Exhibit 4.2 to our Current Report on Form 8-K (File No. 0-29089) dated January 9, 2008 and incorporated herein by reference.                                                                                                                                                                              |
| 4.17               | Purchase Agreement dated August 31, 2007 by and between Antigenics Inc. and Fletcher International, Ltd. Filed as Exhibit 99.1 to our Current Report on Form 8-K (File No. 0-29089) dated August 31, 2007 and incorporated herein by reference.                                                                                                                                                              |
| 4.18               | Form of Debenture. Filed as Exhibit 4.1 to the Current Report on Form 8-K dated April 13, 1998 of Aquila Biopharmaceuticals, Inc. (File No. 0-12081) and incorporated herein by reference.                                                                                                                                                                                                                   |
| 10.1*              | 1999 Equity Incentive Plan. Filed as Exhibit 10.1 to our registration statement on Form S-1 (File No. 333-91747) and incorporated herein by reference.                                                                                                                                                                                                                                                       |
| 10.1.1*            | Amendment No. 1 to Antigenics Inc. 1999 Equity Incentive Plan. Filed as Exhibit 4.1 to our Current Report on Form 8-K (File No. 0-29089) dated June 11, 2003 and incorporated herein by reference.                                                                                                                                                                                                           |
| 10.1.2*            | Amendment No. 2 to Antigenics Inc. 1999 Equity Incentive Plan. Filed as Exhibit 4.1 to our Current Report on Form 8-K (File No. 0-29089) dated May 27, 2004 and incorporated herein by reference.                                                                                                                                                                                                            |
| 10.1.3             | Form of Non-Statutory Stock Option. Filed as Exhibit 10.1 to our Current Report on Form 8-K (File No. 0-29089) dated December 15, 2004 and incorporated herein by reference.                                                                                                                                                                                                                                 |
| 10.1.4*            | Amendment No. 3 to Antigenics Inc. 1999 Equity Incentive Plan. Filed as Exhibit 10.1 to our Current Report on Form 8-K (File No. 0-29089) dated June 14, 2006 and incorporated herein by reference.                                                                                                                                                                                                          |
| 10.1.5*            | Form of 2007 Restricted Stock Award Agreement. Filed herewith.                                                                                                                                                                                                                                                                                                                                               |
| 10.1.6*            | Form of 2008 Restricted Stock Award Agreement. Filed as Exhibit 10.1 to our Current Report on Form 8-K (File No. 0-29089) dated March 11, 2008 and incorporated herein by reference.                                                                                                                                                                                                                         |
| 10.2*              | 1999 Employee Stock Purchase Plan, as amended. Filed as Exhibit 10.1 to our Current Report on Form 8-K (File No. 0-29089) dated June 11, 2007 and incorporated herein by reference.                                                                                                                                                                                                                          |
| 10.3               | Founding Scientist s Agreement between Antigenics and Pramod K. Srivastava, Ph.D. dated March 28, 1995. Filed as Exhibit 10.3 to our registration statement on Form S-1 (File No. 333-91747) and incorporated herein by reference.                                                                                                                                                                           |
| 10.3.1(1)          | Amendment to Founding Scientist s Agreement dated January 1, 2003. Filed as Exhibit 10.29 to our Annual Report on Form 10-K (File No. 0-29089) for the year ended December 31, 2002 and incorporated herein by reference.                                                                                                                                                                                    |
| 10.4               | Form of Indemnification Agreement between Antigenics and its directors and executive officers. These agreements are materially different only as to the signatories and the dates of execution. Filed as Exhibit 10.4 to our registration statement on Form S-1 (File No. 333-91747) and incorporated herein by reference. Current schedule identifying the directors and executive officers filed herewith. |
| 10.5(1)            | Patent License Agreement between Antigenics and Mount Sinai School of Medicine dated November 1, 1994, as amended on June 5, 1995. Filed as Exhibit 10.8 to our registration statement on Form S-1 (File No. 333-91747) and incorporated herein by reference.                                                                                                                                                |
| 10.6(1)            | Sponsored Research and Technology License Agreement between Antigenics and Fordham University dated March 28, 1995, as amended on March 22, 1996. Filed as Exhibit 10.9 to our registration statement on Form S-1 (File No. 333-91747) and incorporated herein by reference.                                                                                                                                 |



## **Table of Contents**

| <b>Exhibit No.</b> | <b>Description</b>                                                                                                                                                                                                                                                                                                                                                         |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10.7*              | Antigenics 401(k) Plan. Filed as Exhibit 10.17 to our registration statement on Form S-1 (File No. 333-91747) and incorporated herein by reference.                                                                                                                                                                                                                        |
| 10.8*              | Antigenics L.L.C. Incentive Equity Plan. Filed as Exhibit 10.18 to our registration statement on Form S-1 (File No. 333-91747) and incorporated herein by reference.                                                                                                                                                                                                       |
| 10.9               | Lease Agreement by and between Aquila Biopharmaceuticals, Inc. and NDNE 9/90 Corporate Center LLC effective September 19, 1997. Filed as Exhibit 10.1 to Amendment No. 1 to registration statement on Form S-3 of Aquila Biopharmaceuticals, Inc. (File No. 333-46641) and incorporated herein by reference.                                                               |
| 10.9.1             | First Amendment to Lease Agreement by and between Aquila Biopharmaceuticals, Inc. and NDNE 9/90 Corporate Center LLC dated December 17, 1997. Filed as Exhibit 10.1 to Amendment No. 1 to registration statement on Form S-3 of Aquila Biopharmaceuticals, Inc. (File No. 333-46641) and incorporated herein by reference.                                                 |
| 10.9.2             | Second Amendment to Lease Agreement by and between Aquila Biopharmaceuticals, Inc. and NDNE 9/90 Corporate Center LLC dated January 14, 1998. Filed as Exhibit 10.1 to Amendment No. 1 to registration statement on Form S-3 of Aquila Biopharmaceuticals, Inc. (File No. 333-46641) and incorporated herein by reference.                                                 |
| 10.9.3             | Third Amendment to Lease Agreement by and between Aquila Biopharmaceuticals, Inc. and NDNE 9/90 Corporate Center LLC dated February 3, 1998. Filed as Exhibit 10.1 to Amendment No. 1 to registration statement on Form S-3 of Aquila Biopharmaceuticals, Inc. (File No. 333-46641) and incorporated herein by reference.                                                  |
| 10.9.4             | Fourth Amendment to Lease Agreement by and between Aquila Biopharmaceuticals, Inc. and NDNE 9/90 Corporate Center LLC dated February 27, 1998. Filed as Exhibit 10.1 to Amendment No. 1 to registration statement on Form S-3 of Aquila Biopharmaceuticals, Inc. (File No. 333-46641) and incorporated herein by reference.                                                |
| 10.9.5             | Fifth Amendment to Lease Agreement by and between Aquila Biopharmaceuticals, Inc. and NDNE 9/90 Corporate Center LLC dated March 13, 1998. Filed as Exhibit 10.1 to Amendment No. 1 to registration statement on Form S-3 of Aquila Biopharmaceuticals, Inc. (File No. 333-46641) and incorporated herein by reference.                                                    |
| 10.9.6             | Sixth Amendment to Lease Agreement by and between Antigenics Inc., a Massachusetts corporation (formerly Aquila Biopharmaceuticals, Inc.) and wholly owned subsidiary of Antigenics and NDNE 9/90 Corporate Center LLC dated March 16, 2004. Filed herewith.                                                                                                               |
| 10.10              | Consent to Assignment of Lease Agreement by and between Aquila Biopharmaceuticals, Inc., Antigenics Inc., a Massachusetts corporation and wholly owned subsidiary of Antigenics, and NDNE 9/90 Corporate Center LLC dated May 8, 2001. Filed herewith.                                                                                                                     |
| 10.11              | First Amendment to Consent to Sublease Agreement by and between Antigenics Inc., a Massachusetts corporation (formerly Aquila Biopharmaceuticals, Inc.) and wholly owned subsidiary of Antigenics, GTC Biotherapeutics, Inc., and NDNE 9/90 Corporate Center LLC dated March 16, 2004. Filed herewith.                                                                     |
| 10.12              | Sublease Agreement between Antigenics Inc., a Massachusetts corporation (formerly Aquila Biopharmaceuticals, Inc.) and wholly owned subsidiary of Antigenics, and GTC Biotherapeutics, Inc. dated July 16, 2002. Filed as Exhibit 10.1 to our Quarterly Report on Form 10-Q (File No. 0-29089) for the quarter ended June 30, 2002 and incorporated herein by reference.   |
| 10.12.1            | First Amendment to Sublease Agreement between Antigenics Inc., a Massachusetts corporation (formerly Aquila Biopharmaceuticals, Inc.) and wholly owned subsidiary of Antigenics, and GTC Biotherapeutics, Inc. dated March 16, 2004. Filed as Exhibit 10.2 to our Current Report on Form 8-K (File No. 0-29089) dated March 17, 2004 and incorporated herein by reference. |

## **Table of Contents**

| <b>Exhibit No.</b> | <b>Description</b>                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10.13              | Leasehold Lease Agreement between Antigenics Inc., a Massachusetts corporation (formerly Aquila Biopharmaceuticals, Inc.) and wholly owned subsidiary of Antigenics, and GTC Biotherapeutics, Inc. dated July 19, 2002. Filed as Exhibit C of Exhibit 10.1 to our Quarterly Report on Form 10-Q (File No. 0-29089) for the quarter ended June 30, 2002 and incorporated herein by reference.                       |
| 10.13.1            | First Amendment to Leasehold Lease Agreement between Antigenics Inc., a Massachusetts corporation (formerly Aquila Biopharmaceuticals, Inc.) and wholly owned subsidiary of Antigenics, and GTC Biotherapeutics, Inc. dated March 16, 2004. Filed as Exhibit B of Exhibit 10.2 to our Current Report on Form 8-K (File No. 0-29089) dated April 1, 2004 and incorporated herein by reference.                      |
| 10.14              | Side Letter between Antigenics Inc., a Massachusetts corporation (formerly Aquila Biopharmaceuticals, Inc.) and GTC Biotherapeutics, Inc. dated March 16, 2004. Filed herewith.                                                                                                                                                                                                                                    |
| 10.15              | Antigenics Consent Agreement between Antigenics Inc., a Massachusetts corporation (formerly Aquila Biopharmaceuticals, Inc.), GTC Biotherapeutics, Inc., and General Electric Capital Corporation dated February 28, 2007. Filed herewith.                                                                                                                                                                         |
| 10.16              | Sublease Agreement by and between Antigenics Inc., a Massachusetts corporation (formerly Aquila Biopharmaceuticals, Inc.) and PP Manufacturing, a Delaware corporation, dated March 16, 2004. Filed as Exhibit 10.1 to our Current Report on Form 8-K (File No. 0-29089) dated March 17, 2004 and incorporated herein by reference.                                                                                |
| 10.17(1)           | Exclusive License Agreement dated September 24, 1986, between Aronex Pharmaceuticals, Inc., (formerly Argus Pharmaceuticals Inc.), The University of Texas System Board of Regents and The University of Texas M.D. Anderson Cancer Center. Filed as Exhibit 10.8 to the registration statement on Form S-1 (File No. 333-47418) of Aronex Pharmaceuticals, Inc. and incorporated herein by reference.             |
| 10.18(1)           | Exclusive License Agreement dated July 1, 1988, between Aronex Pharmaceuticals, Inc. (formerly Argus Pharmaceuticals Inc.), The University of Texas System Board of Regents and The University of Texas M.D. Anderson Cancer Center. Filed as Exhibit 10.10 to the registration statement on Form S-1 (File No. 333-47418) of Aronex Pharmaceuticals, Inc. and incorporated herein by reference.                   |
| 10.18.1(1)         | Amendments No. 1, 2, 3, 5, 6 and 7 to Exclusive License Agreement and Letter Agreement, dated July 18, 2005, among Aronex Pharmaceuticals, Inc. (formerly Argus Pharmaceuticals Inc.), The University of Texas System Board of Regents and The University of Texas M.D. Anderson Cancer Center. Filed herewith.                                                                                                    |
| 10.18.2(1)         | Amendment No. 4 to Exclusive License Agreement, dated July 9, 1993, among Aronex Pharmaceuticals, Inc. (formerly Argus Pharmaceuticals Inc.), The University of Texas System Board of Regents and The University of Texas M.D. Anderson Cancer Center. Filed as Exhibit 10.20 to the registration statement on Form S-1 (File No. 333-71166) of Aronex Pharmaceuticals, Inc. and incorporated herein by reference. |
| 10.19(1)           | Amended and Restated License Agreement, dated September 1, 2003, between Antigenics Inc. and Sumitomo Pharmaceuticals Co., Ltd. Filed herewith.                                                                                                                                                                                                                                                                    |
| 10.20              | Lease of Premises at 3 Forbes Road, Lexington, Massachusetts dated as of December 6, 2002 from BHX, LLC, as Trustee of 3 Forbes Realty Trust, to Antigenics. Filed as Exhibit 10.1 to our Current Report on Form 8-K (File No. 0-29089) dated January 8, 2003 and incorporated herein by reference.                                                                                                                |
| 10.20.1            | First Amendment of Lease dated as of August 15, 2003 from BHX, LLC as trustee of 3 Forbes Road Realty, to Antigenics Inc. Filed as Exhibit 10.1 to our Quarterly Report on Form 10-Q (File No. 0-29089) for the quarter ended March 31, 2004 and incorporated herein by reference.                                                                                                                                 |

## **Table of Contents**

| <b>Exhibit No.</b> | <b>Description</b>                                                                                                                                                                                                                                                                                                          |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10.20.2            | Second Amendment of Lease dated as of March 7, 2007 from BHX, LLC as trustee of 3 Forbes Road Realty, to Antigenics Inc. Filed as Exhibit 10.1 to our Quarterly Report on Form 10-Q (File No. 0-29089) for the quarter ended March 31, 2007 and incorporated herein by reference.                                           |
| 10.21*             | Antigenics Inc. Directors' Deferred Compensation Plan, as amended. Filed as Exhibit 10.1 to our Current Report on Form 8-K (File No. 0-29089) dated June 11, 2007 and incorporated herein by reference.                                                                                                                     |
| 10.22(1)           | License Agreement between the University of Connecticut Health Center and Antigenics Inc. dated May 25, 2001, as amended on March 18, 2003. Filed as Exhibit 10.2 to the Amendment No. 1 to our Quarterly Report on Form 10-Q (File No. 0-29089) for the quarter ended March 31, 2003 and incorporated herein by reference. |
| 10.23*             | Employment Agreement dated February 20, 2007 between Antigenics Inc. and Shalini Sharp. Filed as Exhibit 10.1 to our Current Report on Form 8-K (File No. 0-29089) dated February 20, 2007 and incorporated herein by reference.                                                                                            |
| 10.24*             | Employment Agreement dated February 20, 2007 between Antigenics Inc. and Kerry Wentworth. Filed as Exhibit 10.2 to our Current Report on Form 8-K (File No. 0-29089) dated February 20, 2007 and incorporated herein by reference.                                                                                          |
| 10.25*             | Employment Agreement dated July 26, 2004 between Antigenics Inc. and Roman Chiciz. Filed as Exhibit 10.1 to our Quarterly Report on Form 10-Q (File No. 0-29089) for the quarter ended March 31, 2005 and incorporated herein by reference.                                                                                 |
| 10.25.1*           | First Amendment to Employment Agreement dated July 26, 2004 between Antigenics Inc. and Roman Chiciz. Filed as Exhibit 10.3 to our Current Report on Form 8-K (File No. 0-29089) dated December 7, 2005 and incorporated herein by reference.                                                                               |
| 10.26*             | Employment Agreement dated December 1, 2005 between Antigenics Inc. and Garo Armen. Filed as Exhibit 10.1 to our Current Report on Form 8-K (File No. 0-29089) dated December 7, 2005 and incorporated herein by reference.                                                                                                 |
| 10.27*             | Executive Change of Control Plan. Filed as Exhibit 10.33 to our Annual Report on Form 10-K (File No. 0-29089) for the year ended December 31, 2005 and incorporated herein by reference.                                                                                                                                    |
| 10.28*             | 2004 Executive Incentive Plan. Filed herewith.                                                                                                                                                                                                                                                                              |
| 10.29*             | Consulting Agreement dated March 28, 2006 between Antigenics Inc. and Pramod Srivastava. Filed as Exhibit 10.1 to our Current Report on Form 8-K (File No. 0-29089) dated March 27, 2006 and incorporated herein by reference.                                                                                              |
| 10.30(1)           | License Agreement by and between Antigenics, Inc. and GlaxoSmithKline Biologicals SA dated July 6, 2006. Filed as Exhibit 10.1 to our Quarterly Report on Form 10-Q (File No. 0-29089) for the quarter ended June 30, 2006 and incorporated herein by reference.                                                            |
| 10.31(1)           | Manufacturing Technology Transfer and Supply Agreement by and between Antigenics, Inc. and GlaxoSmithKline Biologicals SA dated July 6, 2006. Filed as Exhibit 10.2 to our Quarterly Report on Form 10-Q (File No. 0-29089) for the quarter ended June 30, 2006 and incorporated herein by reference.                       |
| 10.32(1)           | Binding Letter of Intent by and between Antigenics, Inc. and GlaxoSmithKline Biologicals SA dated July 6, 2007. Filed as Exhibit 10.1 to our Quarterly Report on Form 10-Q (File No. 0-29089) for the quarter ended September 30, 2007 and incorporated herein by reference.                                                |
| 10.33              | Standard Form of Loft Lease effective October 24, 2006 between 162 Fifth Avenue Associates LLC and Antigenics Inc. Filed as Exhibit 10.1 to our Quarterly Report on Form 10-Q (File No. 0-29089) for the quarter ended September 30, 2006 and incorporated herein by reference.                                             |

## **Table of Contents**

| <b>Exhibit No.</b> | <b>Description</b>                                                                                                                                                                                                                                                                                                                                                |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10.34              | Form of the Johns Hopkins University Uniform Provisions for Board Service. Filed as Exhibit 10.1 to our Current Report on Form 8-K (File No. 0-29089) dated September 13, 2006 and incorporated herein by reference.                                                                                                                                              |
| 10.35              | License Agreement by and between Antigenics, Inc., a Massachusetts corporation (formerly Aquila Biopharmaceuticals, Inc.), Neuralab Limited, and Elan Pharmaceuticals, Inc. dated November 23, 1999. Filed as Exhibit 10.2 to our Quarterly Report on Form 10-Q (File No. 0-29089) for the quarter ended September 30, 2007 and incorporated herein by reference. |
| 10.36              | Supply Agreement by and between Antigenics, Inc., a Massachusetts corporation (formerly Aquila Biopharmaceuticals, Inc.), Neuralab Limited, and Elan Pharmaceuticals, Inc. dated November 23, 1999. Filed as Exhibit 10.3 to our Quarterly Report on Form 10-Q (File No. 0-29089) for the quarter ended September 30, 2007 and incorporated herein by reference.  |
| 10.37              | Consent to Assignment and Guarantee of License and Supply Agreements by and between Antigenics Inc., Elan Corporation, plc, and Elan Pharma International Limited dated September 12, 2007. Filed as Exhibit 10.4 to our Quarterly Report on Form 10-Q (File No. 0-29089) for the quarter ended September 30, 2007 and incorporated herein by reference.          |
| 10.38              | Securities Purchase Agreement by and between Antigenics Inc. and the investors identified on Schedule I attached to the agreement, dated January 9, 2008. Filed as Exhibit 10.1 to our Current Report on Form 8-K (File No. 0-29089) dated January 9, 2008 and incorporated herein by reference.                                                                  |
| 21                 | Subsidiaries of Antigenics. Filed as Exhibit 21 to our Annual Report on Form 10-K (File No. 0-29089) for the year ended December 31, 2004 and incorporated herein by reference.                                                                                                                                                                                   |
| 23                 | Consent of KPMG LLP, independent registered public accounting firm. Filed herewith.                                                                                                                                                                                                                                                                               |
| 31.1               | Certification of Chief Executive Officer pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as amended. Filed herewith.                                                                                                                                                                                                         |
| 31.2               | Certification of Chief Financial Officer pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as amended. Filed herewith.                                                                                                                                                                                                         |
| 32.1(2)            | Certification of Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. Submitted herewith.                                                                                                                                                                 |

\* Indicates a management contract or compensatory plan.

- (1) Certain confidential material contained in the document has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended or Rule 24b-2 of the Securities Exchange Act of 1934, as amended.
- (2) This certification accompanies the Annual Report on Form 10-K and is not filed as part of it.

**Table of Contents**

**SIGNATURES**

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

ANTIGENICS INC.

By: /s/ GARO H. ARMEN, PH.D.  
**Garó H. Armen, Ph.D.**  
*Chief Executive Officer and  
Chairman of the Board*

Dated: March 14, 2008

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant in the capacities indicated as of March 14, 2008.

| <b>Signature</b>                                            | <b>Title</b>                                                                                    |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| /s/ GARO H. ARMEN, PH.D.<br><br><b>Garó H. Armen, Ph.D.</b> | Chief Executive Officer and Chairman of the<br>Board of Directors (Principal Executive Officer) |
| /s/ SHALINI SHARP<br><br><b>Shalini Sharp</b>               | Vice President and Chief Financial Officer<br>(Principal Financial Officer)                     |
| /s/ CHRISTINE M. KLASKIN<br><br><b>Christine M. Klaskin</b> | Vice President, Finance<br>(Principal Accounting Officer)                                       |
| /s/ BRIAN CORVESE<br><br><b>Brian Corvese</b>               | Director                                                                                        |
| /s/ TOM DECHAENE<br><br><b>Tom Dechaene</b>                 | Director                                                                                        |
| /s/ MARGARET EISEN<br><br><b>Margaret Eisen</b>             | Director                                                                                        |
| /s/ JOHN HATSOPOULOS<br><br><b>John Hatsopoulos</b>         | Director                                                                                        |
| /s/ WADIH JORDAN<br><br><b>Wadih Jordan</b>                 | Director                                                                                        |

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/s/ HYAM I. LEVITSKY, MD

Director

**Hyam I. Levitsky, MD**

/s/ PETER THORNTON

Director

**Peter Thornton**

/s/ TIMOTHY R. WRIGHT

Director

**Timothy R. Wright**