

VICAL INC
Form 10-K
March 04, 2011
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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549
FORM 10-K

(Mark One)

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2010.

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: 000-21088

VICAL INCORPORATED

(Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation or organization)	93-0948554 (I.R.S. Employer Identification No.)
10390 Pacific Center Court, San Diego, California (Address of principal executive offices)	92121-4340 (Zip Code)
Registrant's telephone number, including area code: (858) 646-1100	

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

Title of each class	Name of each exchange on which registered
Common Stock, \$0.01 par value	The Nasdaq Global Market

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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 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 whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). 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.

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

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

The aggregate market value of the voting stock held by non-affiliates of the registrant, based upon the last sale price of the registrant's common stock reported on the Nasdaq Global Market on June 30, 2010, was approximately \$141,244,280.

The number of shares of common stock outstanding as of February 15, 2011, was 71,695,518.

Documents Incorporated by Reference:

Document
Proxy Statement for the Annual Meeting of
Stockholders to be held May 26, 2011

Part of Form 10-K
Part III

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FORWARD-LOOKING STATEMENTS

In addition to historical information, this Annual Report on Form 10-K contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act, including statements regarding our business, our financial position, the research and development of biopharmaceutical products based on our patented DNA delivery technologies, and other statements describing our goals, expectations, intentions or beliefs. Such statements reflect our current views and assumptions and are subject to risks and uncertainties, particularly those inherent in the process of developing and commercializing biopharmaceutical products based on our patented DNA delivery technologies. Actual results could differ materially from those discussed in this Annual Report on Form 10-K. Factors that could cause or contribute to such differences include, but are not limited to, those identified in Item 1A entitled "Risk Factors" beginning on page 25 of this report, as well as those discussed in our other filings with the Securities and Exchange Commission, or SEC, including our Quarterly Reports on Form 10-Q. As a result, you are cautioned not to unduly rely on these forward-looking statements. We disclaim any duty to update any forward-looking statement to reflect events or circumstances that occur after the date on which such statement is made.

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PART I

ITEM 1. BUSINESS

Overview

We research and develop biopharmaceutical products based on our patented DNA delivery technologies for the prevention and treatment of serious or life-threatening diseases. We believe the following areas of research offer the greatest potential for near-term commercialization for us and our partners:

Vaccines for use in high-risk populations for infectious disease targets for which there are significant needs;

Vaccines for general pediatric, adolescent and adult populations for infectious disease applications;

Cancer vaccines or immunotherapies which complement our existing programs and core expertise; and

Gene-based delivery of therapeutic proteins, such as angiogenic growth factors, for treatment of cardiovascular diseases. We currently have five active independent clinical and preclinical development programs in the areas of infectious disease and cancer including:

A fully enrolled Phase 3 clinical trial using our Allovectin[®] immunotherapeutic in patients with metastatic melanoma which has been funded, up to certain limits, by AnGes MG, Inc., or AnGes, through cash payments and equity investments under a research and development agreement;

A recently completed Phase 2 clinical trial using TransVax[®], our cytomegalovirus, or CMV, therapeutic DNA vaccine, in patients undergoing hematopoietic cell transplants. Preparation for a Phase 3 trial is ongoing;

An ongoing Phase 1 clinical trial using our H1N1 pandemic influenza DNA vaccine formulated with our proprietary Vaxfectin[®] adjuvant;

A completed preclinical program using our CyMVectin[®] prophylactic vaccine formulated with our proprietary Vaxfectin[®] adjuvant to prevent CMV infection before and during pregnancy; and

A preclinical program with therapeutic and prophylactic vaccines for herpes simplex virus 2 formulated with our proprietary Vaxfectin[®] adjuvant.

We have leveraged our patented technologies through licensing and collaboration arrangements, such as our licensing arrangements with Merck & Co., Inc., or Merck, the sanofi-aventis Group, or sanofi-aventis, AnGes, Aqua Health Ltd. of Canada, or Aqua Health, an affiliate of Novartis Animal Health, and Merial Limited, or Merial, a subsidiary of sanofi-aventis, among other biopharmaceutical companies. Two of the licenses have resulted in the following approvals in veterinary applications, which we believe are important steps in the validation of our DNA delivery technology:

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In 2005, our licensee Aqua Health received approval from the Canadian Food Inspection Agency to sell a DNA vaccine, Apex[®]-IHN, to protect farm-raised salmon against a lethal infectious disease.

In 2009, our licensee Merial received approval from the U.S. Department of Agriculture, or USDA, to market a therapeutic DNA vaccine, ONCEPT[®], designed to aid in extending the survival time of dogs with oral melanoma, which was launched in January 2010.

We believe that Merial's vaccine is the first cancer vaccine ever approved for therapeutic use.

Furthermore, our partner AnGes has applied our technologies to the local delivery of a gene that encodes an angiogenic growth factor that promotes the growth of blood vessels. AnGes has reported that it is currently preparing for a global Phase 3 clinical trial for its Collatogene angiogenesis product in patients with critical limb ischemia, or CLI, an advanced form of peripheral arterial disease, or PAD, and in the meantime has recently withdrawn its New Drug Application, or NDA, previously submitted to the Japanese Ministry of Health, Labor

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and Welfare. AnGes previously announced that it had reached agreement with the Food and Drug Administration, or FDA, regarding a Special Protocol Assessment for the Phase 3 clinical trial of Collategene and that the FDA has granted Fast Track designation to Collategene as a treatment for CLI.

In addition, we have licensed complementary technologies from leading research institutions and biopharmaceutical companies. We also have granted non-exclusive, academic licenses to our DNA delivery technology patent estate to 11 leading research institutions including Stanford, Harvard, Yale and the Massachusetts Institute of Technology. The non-exclusive academic licenses allow university researchers to use our technology free of charge for educational and internal, non-commercial research purposes. In exchange, we have the option to exclusively license from the universities potential commercial applications arising from their use of our technology on terms to be negotiated.

Available Information

We were incorporated in Delaware in 1987. Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and amendments to these reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act, are available free of charge on our website at www.vical.com as soon as reasonably practicable after such reports and amendments are electronically filed with or furnished to the SEC. We also make available copies of our news releases and other financial information about us on our website.

Our Core Technology

The key discovery leading to our patented core DNA delivery technology was that muscle tissues can take up polynucleotide genetic material, such as DNA or RNA, directly, without the use of viral components or other delivery vehicles, and subsequently express the proteins encoded by the genetic material for periods ranging from weeks to more than a year. Our approach typically involves designing and constructing closed loops of DNA called plasmids, or pDNAs. These pDNAs contain a DNA segment encoding the protein of interest, as well as short segments of DNA that control protein expression. Plasmids can be manufactured using uniform methods of fermentation and processing. This could result in faster development and production times than technologies that require development of product-specific manufacturing processes.

Since the initial discovery of our DNA delivery technology, our researchers have improved the design of our plasmids to provide increases in efficiency of gene expression and immunogenicity. In addition, we continue to develop formulations, adjuvants, and delivery technologies, including the use of lipid molecules, synthetic polymers called poloxamers and other approaches to enhance DNA expression or increase the immune response to DNA vaccines. We own broad patent rights in the United States and in key foreign markets to certain non-viral polynucleotide delivery technologies. Our patents and patent applications cover, for example, DNA delivery for immunization and delivery of therapeutic proteins, specific DNA constructs and formulations of gene-based product candidates, methods for producing pharmaceutical-grade DNA, and several families of lipid molecules and their uses in DNA delivery. Benefits of our DNA delivery technologies may include the following, which may enable us to offer novel treatment alternatives for diseases that are currently poorly addressed:

Broad Applicability. Our DNA delivery technologies may be useful in developing vaccines for infectious diseases, in which the expressed protein induces an immune response; novel therapies for cancer, in which the expressed protein is an immune system stimulant or tumor suppressor; and therapeutic protein delivery, in which the expressed protein is a therapeutic agent;

Convenience. Our DNA-based biopharmaceutical product candidates are intended to be administered on an outpatient basis;

Safety. Our product candidates contain no infectious components that may cause unwanted immune responses, infections, or malignant and permanent changes in the targeted cells' genetic makeup;

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Repeat Administration. Our product candidates contain no infectious components that may preclude multiple dosing with a single product or use in multiple products;

Ease of Manufacturing. Our product candidates are manufactured using uniform fermentation and purification procedures; and

Cost-Effectiveness. Our DNA delivery technologies may be more cost-effective than other approaches. They may also cause fewer potential side effects, which may reduce per patient treatment costs.

Applications of DNA Technology

Our DNA delivery technology is currently being developed by us and our partners in four broad areas of application:

Infectious Diseases

DNA vaccines use portions of the genetic code of a pathogen to cause the host to produce proteins of the pathogen that may induce an immune response. Compared with conventional vaccines that use live, weakened, or dead pathogens to produce an immune response, this method potentially offers superior safety and ease of manufacturing, as well as convenient storage and handling characteristics. DNA vaccines have the potential to induce potent T-cell responses against target pathogens as well as trigger production of antibodies. Over the past decade, many scientific publications have documented the effectiveness of DNA vaccines in contributing to immune responses in dozens of species, including fish, nonhuman primates and humans. We believe important steps in the validation of DNA vaccines occurred in 2005 when our licensee Aqua Health received Canadian approval to market its proprietary product, Apex[®]-IHN, a DNA vaccine to protect farm-raised salmon against infectious hematopoietic necrosis virus, or IHNV, and again in late 2009, when our licensee, Merial, received approval from the USDA to sell a therapeutic DNA vaccine, ONCEPT, designed to aid in extending the survival time of dogs with oral melanoma.

Vaccines are generally recognized as the most cost-effective approach for infectious disease healthcare. However, the technical limitations of conventional vaccine approaches have constrained the development of effective vaccines for many diseases. Development of vaccines based on conventional methods requires significant infrastructure in research and manufacturing. In addition, the safety risks associated with certain conventional vaccine approaches may offset their potential benefits. We believe our potential vaccine products may be simpler to manufacture than vaccines made using live viruses or protein subunit approaches, including those involving mammalian, avian or insect cell, or egg-based, culture procedures. In addition, our DNA delivery technologies may accelerate certain aspects of vaccine product development such as nonclinical evaluation and manufacturing.

In the broader vaccine marketplace, it is important to note a changing dynamic. Traditionally, vaccines have been predominantly focused on the pediatric market, intended to protect children from diseases that could cause them serious harm. Today, there is a growing interest in vaccines against diseases that may affect adolescents and adults, which include both sexually transmitted diseases and infections that strike opportunistically, such as during pregnancy or in immunocompromised individuals, including the geriatric population. We believe our technologies, because of their potential safety and development timeline advantages, could be ideally suited for this new generation of vaccines.

Cancer

Cancer is a disease of uncontrolled cell growth. When detected early and still confined to a single location, cancer may be cured by surgery or irradiation. However, neither surgery nor irradiation can cure cancer that has spread throughout the body. Although chemotherapy can sometimes effectively treat cancer that has spread throughout the body, a number of non-cancerous cells, such as bone marrow cells, are also highly susceptible to chemotherapy. As a result, chemotherapy often has fairly significant side effects. Finally, it is common to see cancer return after apparently successful treatment by each of these means.

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Immunotherapy, a process which uses the patient's own immune system to treat cancer, may have advantages over surgery, irradiation, and chemotherapy. Many cancers appear to have developed the ability to hide from the immune system. A treatment that can augment the immune response against tumor cells by making the cancer more visible to the immune system would likely represent a significant improvement in cancer therapy. Immune-enhancing proteins such as interleukin-2, or IL-2, and interferon-alpha, or IFN-a, have shown encouraging results. However, these agents often require frequent doses that regularly result in severe side effects.

We have researched delivery enhancements that may complement our core DNA delivery technology and may help us develop cancer therapies. Our current clinical-stage approach consists of directly injecting solid tumors with plasmids which, upon uptake into cells, direct the production of the encoded immunostimulatory proteins to generate a local, regional and systemic effect. The plasmids are formulated with a cationic lipid-based delivery system. The ease of manufacture, convenience, and ability to repeat administration may offer advantages over current modalities of therapy. In addition, cancer therapies using non-viral DNA delivery may offer an added margin of safety compared with viral-based delivery, as no viral particles or other potentially infectious agents are contained in the formulation.

Human studies utilizing this approach demonstrated anti-tumor effects and were found to be safe with a very low incidence of treatment-related serious adverse events. In addition, studies in animals have demonstrated the potential efficacy of this approach. Further validation of DNA technology in cancer vaccine applications occurred in late 2009, when our licensee Merial received approval from the USDA to sell a therapeutic DNA vaccine, ONCEPT, designed to aid in extending the survival time of dogs with oral melanoma.

Cardiovascular

Cardiovascular diseases represent the leading cause of death in the United States and in most Western countries. Cardiovascular disease refers to the class of diseases that involve the heart or blood vessels. PAD, including critical limb ischemia, or CLI, and coronary artery disease, or CAD, also known as ischemic heart disease, or IHD, are the end result of arterial occlusive disease, which is most commonly known as atherosclerosis. Atherosclerosis affects only the inner lining of an artery and is characterized by fatty deposits that block the flow of blood.

PAD is caused by atherosclerosis in association with hypertension, hypercholesterolemia, cigarette smoking or diabetes. PAD is a common circulatory problem in which narrowed arteries reduce the blood flow to the limbs. Early symptoms of PAD include transient pain in the legs upon walking, a condition called intermittent claudication, which is caused by ischemia. Approximately 25% of ischemic patients will progress to develop CLI, which is associated with pain at rest and ulcers, and frequently requires amputation. Altogether approximately 30% of patients with PAD die within 5 years of developing PAD, rising to approximately 50% after 10 years, which represents a mortality rate exceeding most other vascular conditions including CAD. The number of therapeutic options for PAD remains very limited in comparison with other areas of cardiovascular medicine and the healthcare burden associated with amputations in the U.S. is estimated to be greater than \$10 billion per year.

CAD occurs when the coronary arteries that supply blood to the heart muscle become hardened and narrowed. CAD is the most common type of heart disease and is the leading cause of death in the U.S. in both men and women. Over time, CAD can weaken the heart muscle and contribute to heart failure or arrhythmias. Current treatment regimens for CAD include drugs, catheter-based interventional therapies such as balloon angioplasty or stents, mechanical therapies such as atherectomy, and surgical procedures such as bypass surgery.

We believe PAD and CAD may be better treated with angiogenesis, which refers to the growth of new blood vessels from pre-existing vessels to replace those blocked by the disease. Our core DNA delivery technology may allow the targeted delivery of certain growth factors with potential therapeutic value in the emerging field of

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angiogenesis. Angiogenesis has been shown to occur by the exogenous administration of angiogenic growth factors. We believe that the localized and sustained expression of these growth factors from plasmids may be both safe and effective.

Veterinary

Prior to its development for human therapy, our DNA delivery technologies were extensively tested in animals. Research scientists have published numerous papers detailing favorable results in many species and covering a broad range of disease indications. Animal health encompasses two distinct market segments: livestock, or animals bred and raised for food or other products, and companion animals, or pets. Through our collaborative partnerships there have been approvals within each of these market segments for vaccines utilizing our DNA delivery technology.

Business Strategy

There are four basic elements to our business strategy:

Develop Products Independently

We currently focus our resources on the independent development of infectious disease vaccines and cancer immunotherapeutics. The selection of targets for our independent development programs is driven by three key criteria: the complexity of the product development program, competition, and commercial opportunities. We intend to retain significant participation in the commercialization of any independently developed proprietary DNA vaccines and therapeutics that receive regulatory approval, although we may choose to enlist the support of partners to accelerate product development and commercialization.

Infectious Disease Vaccines. Vaccines are perceived by government and medical communities as an efficient and cost-effective means of healthcare. According to the Centers for Disease Control and Prevention, or CDC, Vaccines are among the very best protections we have against infectious diseases. In the infectious disease area, we have primarily focused our resources on the development of DNA based vaccines against CMV and pandemic influenza. We believe our technologies may lead to the development of novel preventive or therapeutic vaccines for infectious disease targets. DNA vaccines may help combat diseases for which conventional vaccine methods have been unsuccessful.

Cancer Therapies. In the cancer area, we are focusing our resources on the development of Allovectin[®] initially as a potential treatment for metastatic melanoma, an aggressive form of skin cancer. Allovectin[®] is a plasmid/lipid formulation containing the DNA sequences encoding HLA-B7 and b2 microglobulin, which together form a Major Histocompatibility Complex, or MHC, Class I antigen. Injection of Allovectin[®] directly into tumors is designed to stimulate a systemic immune response against both local and distant metastatic tumors. In previous human clinical trials, Allovectin[®] has shown evidence of activity against other types of cancer, and could potentially be used to treat any injectable immunoreactive solid tumor.

Enhance and Expand Our Technologies

We are actively pursuing the refinement of our plasmids and formulations, the evaluation of potential enhancements to our core technologies and the exploration of additional DNA delivery technologies. We are developing future product candidates based on these technologies through nonclinical and clinical testing to determine their safety and effectiveness. We also seek to develop additional applications for our technologies by testing new approaches to disease control or prevention. These efforts could lead to further independent product development or additional licensing opportunities. In addition, we continually evaluate compatible technologies or products that may be of potential interest for in-licensing or acquisition. We license intellectual property from companies holding complementary technologies to leverage the potential of our own DNA delivery technologies and to further the discovery of innovative therapies for internal development.

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Expand the Applications of Our Technologies through Strategic Collaborations

We collaborate with major pharmaceutical and biotechnology companies and government agencies, providing us access to complementary technologies or greater resources. These collaborations are intended to provide us with mutually beneficial opportunities to expand our product pipeline and serve significant unmet medical needs. We license our intellectual property to other companies to leverage our technologies for applications that may not be appropriate for our independent product development.

Pursue Contract Manufacturing Opportunities

We selectively pursue contract manufacturing opportunities to leverage our infrastructure and expertise in pDNA manufacturing, to support advancement and application of our technologies by others, and to provide revenues that contribute to our independent research and development efforts.

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We, together with our licensees and collaborators, are currently developing a number of DNA-based vaccines and therapeutics for the prevention or treatment of infectious diseases, cardiovascular diseases and cancer. Our lead independent development programs focus on metastatic melanoma and CMV. The table below summarizes our independent programs and corporate and government collaborations.

Product/Concept	Intended Use	Development Status¹	Lead Developer
Independent Programs			
Alloectin [®] cancer immunotherapeutic	First-line treatment for metastatic melanoma	Phase 3	Vical
TransVax therapeutic vaccine for cytomegalovirus	Protect against viral reactivation after transplant	Phase 3 preparation	Vical
Prophylactic vaccine for H5N1 pandemic influenza virus	Prevent infection, disease, and/or viral shedding	Phase 1 complete	Vical
Prophylactic vaccine for H1N1 pandemic influenza virus	Prevent infection, disease, and/or viral shedding	Phase 1	Vical
CyMVectin prophylactic vaccine for cytomegalovirus	Prevent infection before pregnancy to preclude fetal transmission	Preclinical complete	Vical
Therapeutic vaccine for herpes simplex type 2 virus	Protect against recurring flare-ups, reduce viral shedding and transmission	Preclinical	Vical
Corporate Collaborations			
Collatgene angiogenic therapy encoding Hepatocyte Growth Factor	Induce local growth of blood vessels to restore blood flow to limbs affected by critical limb ischemia	Phase 3 preparation	AnGes
NV1FGF angiogenic therapy encoding Fibroblast Growth Factor 1	Induce local growth of blood vessels to restore blood flow to limbs affected by critical limb ischemia	Phase 3 ²	sanofi-aventis
Therapeutic vaccine encoding human telomerase reverse transcriptase	Treat non-small cell lung, breast or prostate cancer, melanoma, or carcinomas of the upper GI tract, colon, kidney, or bladder	Phase 1	Merck
Prophylactic and/or therapeutic hepatitis C vaccine	Prevent and/or treat infection, disease, and/or viral shedding	Research	Merck
Apex [®] -IHN prophylactic vaccine for infectious hematopoietic necrosis virus	Prevent infection and disease in farm-raised salmon when exposed to infected wild salmon	Approved in Canada	Aqua Health (Novartis)
ONCEPT therapeutic cancer vaccine encoding human tyrosinase	Adjunct treatment to increase survival time of dogs with oral melanoma	Approved in the United States	Merial
Government Collaborations			
Prophylactic and/or therapeutic HIV vaccine	Prevent and/or treat infection, disease, and/or viral shedding	Phase 2b	NIH

¹ Research indicates exploration and/or evaluation of a potential product candidate in a nonclinical laboratory setting. Preclinical indicates that a specific product candidate in a nonclinical setting has shown functional activity that is relevant to a targeted medical need, and is advancing toward initial human clinical testing. Phase 1 clinical trials are typically conducted with a small number of patients or healthy

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subjects to evaluate safety, determine a safe dosage range, identify side effects, and, if possible, gain early evidence of effectiveness. Phase 2 clinical trials are conducted with a larger group of patients to evaluate effectiveness of an investigational product for a defined patient population, and to determine common short-term side effects and risks associated with the product candidate. Phase 3 clinical trials involve large scale, multi-center, comparative trials that are conducted with patients afflicted with a target disease to evaluate the overall benefit-risk relationship of the investigational product and to provide an adequate basis for product labeling.

² See the discussion of the results of sanofi-aventis Phase 3 trial and current status of the NV1FGF program on page 16.

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Independent Programs Targeting Infectious Diseases

CMV Vaccines

CMV is a ubiquitous herpes virus that can cause serious complications in two distinct patient populations: immunocompromised transplant patients and children born to women initially infected during pregnancy. We are currently developing two CMV vaccines: TransVax and CyMVectin. TransVax is designed to serve the first patient population by preventing CMV reactivation or infection in transplant recipients. CyMVectin is designed to serve the second, much larger patient population by preventing congenital infection by vaccinating women before pregnancy, which we believe represents a major commercial opportunity and may ultimately lead to universal pediatric vaccination.

TransVax

We initially developed TransVax as a pathway to establish a CMV vaccine proof of concept in a relatively small patient population. We decided to specifically target patients who were susceptible to CMV reactivation in hematopoietic cell transplant, or HCT, transplants. Therefore we designed a vaccine that would primarily induce a cellular immune response. TransVax is a plasmid DNA vaccine that induces both T-cell and antibody responses by expressing two antigens, phosphoprotein 65, or pp65, and glycoprotein B, or gB. The tegument protein, pp65, is a major antigen recognized by T cells in CMV-infected individuals. The gB protein is a major surface antigen of CMV and a primary target of neutralizing antibodies. The gB protein is also a major CMV antigen recognized by both CD4⁺ and CD8⁺ T cells in CMV-seropositive subjects. Induction of gB-specific T cells following DNA vaccination may provide an additional antiviral mechanism that could act to reduce CMV replication and viral loads shortly after infection. The vaccine is also formulated with poloxamer CRL1005, which has been shown in nonclinical studies by us and others to enhance gene expression and immune responses.

A multicenter Phase 2 trial has been completed in 94 CMV-seropositive HCT recipients (14 donor-recipient pairs and 80 recipient-only subjects), randomized 1:1 for vaccine or placebo. Subjects enrolled were 18-65 years old, CMV seropositive, and diagnosed with selected leukemias or lymphomas. Subjects received vaccine 3 to 5 days prior to transplant, as well as 21-42, 84 and 196 days after transplant. The dosing schedule was selected based on the anticipated reactivation of CMV in HCT transplant patients. Enrollment in the trial was completed in November 2008 and a 1-year follow up was completed in November 2009. In 2010 we released 12 month post-transplant data, and showed that significant reductions were achieved for key viral reactivation metrics. The incidence of CMV viremia (percentage of subjects with greater than or equal to 500 copies of CMV virus per mL of blood by a central lab assay) was 32% in the TransVax group, and 62% in the placebo group (p=0.008). The median time to initial viremia was greater than 365 days (i.e., the median was not reached during the 12-month study period), for the TransVax group, and 109.5 days for the placebo group (p=0.003). The number of CMV viremia episodes (1-4 per subject) was significantly lower for the TransVax group than for the placebo group (p=0.017). The duration of viremia was lower for the TransVax group than for the placebo group (mean of 10.6 days vs. mean of 19.4 days, respectively; p=0.071), and significantly lower as a percentage of time subjects spent on study (mean of 4.9% vs. mean of 7.6%, respectively; p=0.042). The prevalence of CMV viremia episodes over the trial period was significantly lower for the TransVax group than for the placebo group (p=0.036). Antiviral therapy use was triggered by site-specific treatment practices based on local lab assays, which impeded comparability among the 16 enrolling U.S. sites. Overall, 48% of subjects in the TransVax group vs. 62% of subjects in the placebo group received antiviral drugs for CMV during the study. The median duration of antiviral treatment was approximately 30 days in the TransVax group vs. approximately 40 days in the placebo group. Because antiviral drugs are used preemptively to control CMV outbreaks, CMV-associated disease is rare and the study was not powered to detect a difference in this endpoint. Only three of 40 subjects (8%) in the TransVax group and four of 34 subjects (12%) in the placebo group developed CMV-associated disease. We are currently preparing for a Phase 3 trial.

In 2005, the Office of Orphan Products Development of the FDA designated TransVax as an orphan drug for the prevention of clinically significant CMV viremia, CMV disease and associated complications in at-risk transplant populations. Orphan drug designation provides certain tax benefits for qualifying expenses and can result in extended marketing exclusivity.

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CyMVectin

CMV is the most common congenital infection in the United States and the leading cause of infectious disease-related birth defects. If a woman becomes infected with CMV for the first time during pregnancy, there are no treatment alternatives. CyMVectin was designed to prevent CMV infection prior to pregnancy. We believe this may ultimately reduce birth defects caused by CMV.

CyMVectin consists of pDNA that encodes the human CMV gB antigen either alone or with pDNA that encodes the human CMV pp65 antigen. The product is formulated with our proprietary lipid-based adjuvant Vaxfectin®. Vaxfectin® has been shown in nonclinical studies by us and others to enhance immune responses, particularly antibody responses, to expressed immunogens. A gB protein-based vaccine, developed by others, has shown some protection against CMV infection in a Phase 2 clinical trial, so we believe a vaccine strategy for CMV prevention can be successful. Nonclinical studies performed in rabbit, guinea pig and mouse animal models have demonstrated the ability to induce high titers of gB-specific antibodies in animals receiving the gB plasmid. Rabbit studies of gB pDNA administered intramuscularly demonstrated an approximate 10-fold enhancement of gB antibodies with Vaxfectin® as an adjuvant when compared to gB pDNA in phosphate-buffered saline. Similarly, mouse studies also demonstrated this added benefit of Vaxfectin® as an adjuvant. The results of these studies support both our past experience and other published studies which indicate that immune responses can be induced by pDNA vaccination and that formulation with Vaxfectin® enhances those immune responses. Repeat dose safety studies in rabbits with Vaxfectin®-formulated gB and pp65 plasmids have enabled the allowance of an IND to initiate clinical evaluation of CyMVectin.

About CMV

Cytomegalovirus infects between 50% and 80% of adults in the United States by 40 years of age. Although most healthy people who are infected by CMV after birth are asymptomatic, CMV can affect certain high-risk groups including immunocompromised individuals and prenatal or postnatal infants. Significant mortality and morbidity are observed in the immunocompromised populations, especially HCT and solid organ transplant, or SOT, recipients. In CMV-seropositive HCT recipients, the incidence of CMV reactivation in the first 6 months following transplantation is 50-70% in the absence of prophylaxis. The incidence is reduced to approximately 5% by the use of preemptive antiviral therapy, but currently available antiviral therapies are associated with drug toxicity, are costly, may lead to drug resistance and provide incomplete efficacy. Late-onset CMV reactivation may also occur after this initial period of heightened susceptibility.

Currently no vaccine is approved for the prevention of CMV infection. The only approved treatment for CMV in HCT patients is Cytovene (Ganciclovir), although other antivirals are used off label, such as Valganciclovir, Foscarnet, and Cidofovir. We believe a vaccine that enables the patient's immune system to control CMV infection, thereby reducing the need for antiviral therapy, would be a valuable therapeutic option for HCT recipients. The control of CMV in immunocompromised persons is primarily associated with T-cell mediated immune responses.

CMV-seropositive HCT and SOT recipients represent important populations for the prevention of CMV reactivation and reduction in antiviral therapy. Approximately 50,000 HCT transplants and 60,000 SOT transplants are performed annually in the United States and Europe. We believe these populations represent a significant market potential for our TransVax vaccine.

CMV is the most common intrauterine infection in the United States, occurring in about 1 in 150 live-born infants and resulting in permanent disabilities, such as mental retardation, hearing loss and vision loss, in approximately 8,000 children per year, and 400 deaths annually. Symptomatic congenital infections occur about one-third of the time following a primary maternal infection during pregnancy. Congenital infection can also occur in CMV-seropositive women, which results in even more cases. Prior maternal CMV infection is associated with protection against secondary infection in pregnant women and reduction of congenital infection. Contact with infected young children is the primary source of infection in pregnant women, especially those exposed to children in daycare environments.

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DNA vaccine induction of CMV-specific antibodies and T-cell responses may prevent or limit CMV infection in women before and during pregnancy, which could impact perinatal transmission and newborn infections. We believe that there is a significant market potential for our CyMVectin vaccine, as there are more than 40 million women of childbearing age in the United States.

Pandemic Influenza Vaccine

In 2005, we applied our DNA delivery technology to the development of a pandemic influenza vaccine formulated with our proprietary adjuvant Vaxfectin®. Our approach is to include vaccine components which we believe will provide potential cross strain protection, particularly against severe disease and mortality, unlike conventional influenza vaccines which provide symptomatic relief through antibodies alone and are unlikely to protect against severe disease and mortality if the strain match is not correct.

Avian Influenza H5N1

In 2005, we received a \$2.9 million challenge grant from the U.S. National Institute of Allergy and Infectious Diseases, or NIAID, of the NIH to support the development of a DNA vaccine against pandemic strains of influenza. We achieved all of the milestones under this grant including challenging DNA-vaccinated animals with a virulent Vietnam strain (A/Vietnam/1203/04) of H5N1 avian influenza virus. The data showed that our Vaxfectin®-formulated DNA vaccine provided complete protection of mice and ferrets against lethal challenges with the H5N1 avian influenza virus as well as protection of mice against multiple human influenza strains. In the initial activities covered by the challenge grant, we collaborated with St. Jude Children's Research Hospital, a world-renowned center of expertise in influenza research, including pandemic influenza research.

Data from subsequent studies demonstrated that a single injection of our influenza vaccine candidate provided 100% protection in ferrets against lethal challenge from the H5N1 avian influenza virus. Conventional vaccines under development for pandemic influenza typically have required two or more doses in humans, even with novel adjuvants, to produce the immunogenicity levels expected to provide protection.

In 2007, we initiated a Phase 1 trial of our Vaxfectin®-formulated H5N1 pandemic influenza vaccine. The double-blind, placebo-controlled trial evaluated safety, tolerability and immune responses in 56 healthy volunteers age 18 to 45. Later in 2007, we initiated a second Phase 1 trial to evaluate vaccination with needle-free injection in a double-blind, placebo-controlled trial to evaluate safety, tolerability and immune response in 47 volunteers ages 18 to 45.

In 2008, we completed our Phase 1 H5N1 pandemic influenza trials. The data demonstrated that a Vaxfectin®-formulated DNA vaccine can achieve significant immune responses against H5N1 pandemic influenza in humans. The data suggested that the vaccine was well-tolerated and achieved potentially protective levels of antibody responses (H5 hemagglutination inhibition, or HI, titers of at least 40 and at least a four-fold increase from baseline) in at least 47% and up to 67% of evaluable subjects in the higher H5 dose cohorts in the trials. The data also showed that in the highest H5 dose cohorts, responses peaked by Day 56 and were sustained in 80% to 100% of the responders through the end of the study at Day 182. The vaccines demonstrated cross-clade antibody responses against two different strains in the trials and also induced T-cell responses against a matching strain of influenza virus in 75% to 100% of the subjects for at least six months. No significant safety issues were observed at any of the doses tested.

We are seeking additional funding before proceeding with further development of our H5N1 pandemic influenza vaccine. We believe we can further optimize the vaccine dose and formulation, confirm safety and immunogenicity in a larger number of subjects, and leverage the proof of concept for our DNA vaccine platform and Vaxfectin® adjuvant into additional indications.

Swine Influenza H1N1

In response to the outbreak of 2009 swine-origin H1N1 viruses in Mexico City and the United States, we entered into a Cooperative Research and Development Agreement, or CRADA, with the Naval Medical Research

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Center of the U.S. Navy, or NMRC, to develop a H1N1 DNA vaccine formulated with our Vaxfectin[®] adjuvant. Under the agreement we were obligated to manufacture the vaccine and adjuvant, perform pre-clinical studies, submit an IND to the FDA, and develop a clinical immunoassay. The CRADA with the NMRC provides that each party to the agreement is entitled to own all rights to inventions made by its employees and any inventions invented jointly are to be co-owned. The NMRC has further granted us an exclusive option to license any inventions made in whole or in-part by its employees. To exercise such option we must provide written notice within one hundred eighty days of the filing of a patent application covering the applicable invention.

We initiated the development of a Vaxfectin[®]-formulated H1 HA DNA vaccine derived from the A/California/04/09 (H1N1) virus. We believe that we were the first company to produce a vaccine prototype after the 2009 outbreak, and to demonstrate immunogenicity in two animal species. The vaccine was produced in a matter of weeks and demonstrated robust immune responses well above the accepted protection threshold in 100% of vaccinated mice and rabbits after a standard two-dose vaccine regimen. In addition, at least 75% of vaccinated animals achieved or exceeded the protection threshold after a single dose of vaccine. We completed current Good Manufacturing Practices, or cGMP, manufacturing of the Vaxfectin[®]-formulated H1 HA DNA vaccine. Funding for the preclinical, regulatory and manufacturing activities was provided by the Department of Defense's Transformational Medical Technologies Initiative, or TMTI. TMTI's stated mission is to protect active U.S. military personnel against emerging and genetically altered biological threats by discovering and developing medical counter measures.

In 2010, we were awarded a contract from the U.S. Navy, through the Henry M. Jackson Foundation for the Advancement of Military Medicine, Inc., to conduct a Phase 1 clinical trial of our Vaxfectin[®]-formulated DNA vaccine against A/H1N1 pandemic influenza. The double-blind, placebo-controlled H1N1 influenza vaccine Phase 1 trial enrolled approximately 30 healthy adult volunteers at a single U.S. clinical site. Subjects were randomized 2:1 into the vaccine or placebo arms of the trial. Immunogenicity assessments will continue through the final 6-month follow-up visit. The trial is currently in the final stages of data collection and analysis, which is expected to be completed in the first quarter of 2011.

About Influenza

Pandemic influenza is virulent human influenza that causes a global outbreak, or pandemic, of serious illness. A pandemic could begin if an avian- or swine-origin influenza virus or another influenza strain changes to a form that can spread easily from person to person. Avian-origin influenza is caused by influenza A viruses that occur naturally among wild birds. Most of the hundreds of strains of avian influenza virus remain in birds and cause only mild disease symptoms. Some strains of H5N1 avian influenza virus have become highly pathogenic in recent years and can be deadly to domestic poultry as well as certain wild birds. Certain strains can also be transmitted from birds to humans. Most cases of H5N1 influenza infection in humans have resulted from contact with infected poultry or surfaces contaminated by infected birds. The spread of H5N1 virus from person to person has been limited, but continued changes to the H5N1 virus could result in a strain that is more easily spread from person to person. Because humans have no prior exposure to H5, they have no immunity. Symptoms of avian influenza in humans have ranged from typical human influenza-like symptoms to pneumonia, severe respiratory complications, and death. Swine-origin influenza is caused by influenza A viruses that occur in domestic pigs. The 2009 outbreaks of H1N1 swine-origin influenza caused serious disease or death primarily in people with underlying health issues or young people with no prior exposure to related H1 influenza viruses. Most healthy adults infected by H1N1 swine-origin influenza have suffered from typical symptomatic disease and have recovered fully with no treatment or palliative treatment.

Herpes Simplex Virus-2

In April 2008 we were awarded a two-year, \$2.0 million Phase II Small Business Technology Transfer grant from the NIAID. The grant funded the ongoing development of our immunotherapeutic plasmid DNA vaccine against herpes simplex virus type 2, HSV-2. The HSV-2 vaccine was evaluated with our Vaxfectin[®] adjuvant.

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The grant period was extended to allow preclinical development to continue for a third year. We have completed preclinical studies funded by the HSV-2 grant and found that our prophylactic Vaxfectin[®]-formulated plasmid DNA vaccine protected mice against lethal challenge, provided sterilizing immunity, and inhibited viral counts at both the primary and latent infection sites. The initial results demonstrated that an appropriate dose of the prophylactic Vaxfectin[®]-formulated vaccine, which encoded the HSV-2 glycoprotein D (gD2) antigen elicited antibody responses in 100% of mice against the encoded antigen; protected 100% of mice against subsequent challenge with a lethal dose of live virus; reduced viral shedding in mice at both the primary and latent infection sites; and elicited sterilizing immunity in 80% of mice as evidenced by no detectable virus after challenge at either the primary (vagina) or latent (dorsal root ganglia) infection sites. The Vaxfectin[®] adjuvant substantially improved vaccine effectiveness in the preclinical studies.

A therapeutic vaccine which encoded the gD2 antigen as well as the tegument proteins UL46/UL47, significantly reduced recurrence of HSV-2 lesions in a therapeutic model using guinea pigs with latent infection ($p < 0.05$). Three doses of Vaxfectin[®]-formulated vaccine were administered after resolution of the primary infection.

About HSV-2

HSV-2 is a member of the herpes virus family and is the leading cause of genital herpes worldwide. Approximately one out of every six individuals in the United States and an estimated one out of every four individuals worldwide is infected by HSV-2 before age 50. HSV-2 infection also significantly increases the risk of acquiring HIV-1. In the United States, HSV-2 infects some 1.6 million new people per year, with approximately 500,000 of those suffering from disease symptoms. At least 40 million people in the United States are infected with HSV-2. Even higher infection rates are evident in developing countries, with further complications in people also infected with HIV. All HSV-2 infections are permanent and result in periodic virus shedding. There is no approved vaccine for HSV-2. Although antiviral regimens have become a standard of care, we believe their inconvenience, cumulative cost and potential for drug resistance underscore the need for safe, new approaches to reducing HSV-2 lesions, shedding, and transmission. Estimated annual costs of treating HSV-2 in the United States alone are close to \$1 billion, primarily for drugs and outpatient medical care. Additional indirect costs from HSV-2 infection, such as lost work hours, are more than \$200 million annually in the United States.

Independent Program Targeting Cancer

Allovectin[®]

Allovectin[®] is a plasmid/lipid formulation containing the DNA sequences encoding HLA-B7 and b2 microglobulin, which together form a MHC Class I antigen. We believe injection of Allovectin[®] directly into tumor lesions directs a local, regional and systemic immune response against metastatic tumors through several mechanisms. In HLA-B7 negative patients, a vigorous allogeneic immune response may be initiated against the foreign MHC class I antigen. In all patients, b2 microglobulin may reconstitute normal class I antigen presentation and/or increase tumor antigen presentation to the immune system. In any patient, an innate pro-inflammatory response may occur that induces tumor responses following intralesional injection of the pDNA/lipid complex. The goal of all three of these mechanisms is to initially cause recognition of the tumor at the local site to allow a then-sensitized immune response to recognize un-injected tumors at distant metastatic sites.

In 2001, we began a high-dose, 2 mg, Phase 2 trial evaluating the Allovectin[®] immunotherapeutic alone for patients with stage III or stage IV melanoma, who have few other treatment options. The high-dose Phase 2 trial completed enrollment in 2003. The data showed that the trial had a total of 15 responders among the 127 patients receiving the high dose (11.8%), with four of the patients having complete responses and 11 having partial responses. Data were recently updated after long-term follow-up. The Kaplan-Meier estimated median duration of response was 13.8 months, and all responses were durable with a range of 6 months to 77 months. The updated Kaplan-Meier median survival was 18.8 months. The safety profile was excellent with no reported Grade 3 or Grade 4 adverse events associated with Allovectin[®].

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Based on detailed guidance received from the FDA in an End-of-Phase 2 meeting, we subsequently completed a Special Protocol Assessment, or SPA, with the FDA for a Phase 3 trial of high-dose, 2 mg, Allovectin® for certain patients with recurrent Stage III or Stage IV melanoma. The SPA-agreed protocol specifies the trial objectives and design, clinical endpoints, and planned analyses expected to yield data that will support a license application for product approval.

Enrollment in the Phase 3 trial began in December 2006 and has involved more than 100 clinical sites. Patients could have been previously treated with surgery, adjuvant therapy, and/or biotherapy, but could not have been previously treated with chemotherapy. The patients were randomized on a 2:1, basis with 260 patients treated with Allovectin® and 130 treated with their physician's choice of either of two chemotherapy agents, dacarbazine or temozolomide. The primary endpoint is overall response rate that compares the two trial arms for objective responses that are ongoing or commence at 24 weeks or more after randomization. The study will also evaluate safety and tolerability as well as survival as secondary endpoints. The trial is currently in the final stages of patient follow-up, data collection and analysis, which is expected to be completed in second half of 2011.

AnGes has provided funding for the clinical trial up to certain limits under a research and development agreement. The funding consisted of purchases by AnGes of \$10.85 million of restricted shares of our common stock and additional non-refundable cash payments by AnGes of \$11.75 million. All of the funding provided by AnGes, including those funds used to purchase our common stock, must be used for costs related to the Allovectin® Phase 3 trial. Under the agreement, we granted to AnGes exclusive marketing rights for Allovectin® in specified countries in Asia and AnGes has the opportunity to pursue regulatory approvals in those countries, subject to receipt by us of regulatory approval in the United States. We also granted AnGes certain royalty-bearing licenses to our technology and know-how. AnGes is obligated to pay royalties to us on sales of Allovectin® in specified countries in Asia. AnGes also obtained the right to receive royalties from us on all commercial sales of Allovectin® outside the specified Asian countries.

In 1999, Allovectin® was granted orphan drug designation for the treatment of invasive and metastatic melanoma by the FDA's Office of Orphan Products Development. Orphan drug designation provides certain tax benefits for qualifying expenses and can result in extended marketing exclusivity. In 2010, the FDA granted Fast Track designation of Allovectin® as a treatment for metastatic melanoma. Fast Track designation is intended to facilitate the development and expedite the review of drugs with demonstrated potential to address an unmet medical need for serious diseases. Fast Track designation allows for submission of a Biologics License Application, or BLA, on a rolling basis with ongoing FDA review during the submission process.

About Metastatic Melanoma

The American Cancer Society estimated that approximately 68,130 new diagnoses of, and approximately 8,700 deaths from, melanoma occur annually in the United States. The lifetime risk of getting melanoma has been growing and is now approximately 2% (or 1 in 50) for Caucasians in the United States. Currently, there are no consistently effective therapies for advanced cases of melanoma where the cancer has spread beyond its site of origin, or metastasized. Treatment for these patients normally includes a combination of chemotherapy, radiation therapy, and surgery. In patients with advanced metastatic melanoma, median survival typically ranges from six to ten months.

FDA-approved drugs for treatment of metastatic melanoma include: hydroxyurea, which is no longer commonly used as a single agent; dacarbazine, and IL-2. The toxicity associated with FDA-approved treatments such as dacarbazine or IL-2 is often significant, resulting in serious or life-threatening side effects in many of the patients treated. Patients with metastatic melanoma often are treated with drugs that are not approved for treatment of metastatic melanoma, such as IFN- α , which is approved as adjuvant therapy to surgery, or temozolomide, which is approved for certain types of brain cancer.

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Adjuvant Development

Vaxfectin®

Vaxfectin® is our proprietary, cationic lipid formulation optimized to increase the immune response to vaccines. Vaxfectin® formulations have demonstrated safety and adjuvant activity in pDNA vaccine applications in multiple animal models, including nonhuman primates, in addition to the animal and human influenza studies cited above. Studies of Vaxfectin®-formulated pDNA vaccines against CMV and measles have shown enhanced immunogenicity in rodents and nonhuman primates, respectively. Vaxfectin® has also demonstrated dose-sparing attributes as an adjuvant for protein-based influenza vaccines as well as increased T-cell responses and antitumor responses to formulated peptide-based cancer antigens. In addition to the studies outlined below, there have been a number of published non-clinical infectious disease studies utilizing Vaxfectin® as an adjuvant.

DNA Vaccines

A study has been completed which demonstrated that a measles DNA vaccine formulated with Vaxfectin® adjuvant elicited sustained protective levels of neutralizing antibodies in infant (6-10 week old) nonhuman primates confirmed by complete protection following challenge one year after intradermal vaccination, with no clinical signs of disease and no culturable virus after challenge. Similar results were found in juvenile (1-2 year old) nonhuman primates. Both measles studies were conducted in collaboration with Diane E. Griffin, M.D., Ph.D., Alfred and Jill Sommer Professor and Chair of Molecular Microbiology and Immunology, Johns Hopkins Bloomberg School of Public Health, under a grant from the Bill and Melinda Gates Foundation.

Protein Vaccines

Data from a study in mice showed that a seasonal influenza vaccine, sanofi pasteur's Fluzone® commercial vaccine, when formulated with Vaxfectin® generated up to 200-fold higher antibody responses than an unformulated vaccine at the same dose. Formulation of Fluzone® with Vaxfectin® also allowed a nearly 10-fold reduction in vaccine dose while generating equivalent or better antibody responses compared with unformulated vaccine, even at the lowest doses tested. In separate studies conducted by third parties, sanofi pasteur's H5N1 pandemic influenza vaccine with no adjuvant achieved target antibody levels in less than half the subjects after two 90 mcg doses which are six times the normal 15 mcg dose for each strain of seasonal influenza virus that provides 75% to 90% protection against seasonal influenza. In a separate study in mice we evaluated the potential of Vaxfectin® to be used as a dose-sparing agent with a protein-based H5N1 pandemic influenza vaccine currently stockpiled by the U.S. government. We demonstrated that after a single injection, the Vaxfectin®-formulated vaccine yielded five-fold higher antibody responses at the same dose as an unformulated vaccine, and comparable or better antibody responses at one-third the dose of unformulated vaccine. After a second injection, the Vaxfectin®-formulated vaccine yielded nine-fold higher antibody responses at the same dose as the unformulated vaccine, and five-fold better antibody responses at one-third the dose of the unformulated vaccine. Dose-sparing ability could be critical in extending limited vaccine supplies to protect the greatest number of people in the event of a pandemic influenza outbreak.

We also announced data from mouse studies which demonstrated that Vaxfectin®-formulated seasonal influenza vaccine generated broader, more balanced antibody responses than unformulated vaccine, and also generated influenza-specific T-cell responses. Adjusting the ratio of Vaxfectin® to vaccine allowed substantial increases in either antibody or T-cell responses, without reducing the other type of response, compared with unformulated vaccine. The ability to favor primarily antibody or T-cell responses could provide important advantages in developing vaccines for specific applications.

Cancer Vaccines

In a mouse study completed in 2008, a Vaxfectin®-formulated vaccine containing a peptide from Tyrosinase-Related Protein 2, or TRP-2, an antigen commonly expressed by several types of tumors including

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glioma and melanoma, resulted in approximately a 100-fold increase in antigen-specific CD8+ T-cell responses compared with unformulated vaccine. CD8+ T cells are deployed by the immune system to identify and destroy infected or cancerous cells.

Collaboration and Licensing Agreements

We have entered into various arrangements with corporate, academic, and government collaborators, licensors, licensees, and others. In addition to the agreements summarized below, we conduct ongoing discussions with potential collaborators, licensors and licensees.

Out-licensing

AnGes. In 2005, we granted an exclusive worldwide license to AnGes for use of our core DNA delivery technology in the development and commercialization of DNA-based products encoding hepatocyte growth factor, or HGF, for cardiovascular applications. HGF is a human protein that causes angiogenesis in areas of ischemia.

AnGes is developing DNA-based delivery of HGF for indications related to PAD, a severe condition caused by blockage of blood vessels feeding the foot and lower leg. AnGes completed a Phase 3 trial in Japan in 2007 with DNA-based HGF for CLI, an advanced form of PAD. AnGes completed two Phase 2 trials in the United States in 2006, with DNA-based HGF for PAD. AnGes has partnered with Daiichi Pharmaceutical Co., Ltd., a wholly owned subsidiary of Daiichi Sankyo Company Limited, for development and commercialization of DNA-based HGF for PAD in Japan. In addition, AnGes also completed a Phase 1 trial in the United States for IHD in 2006.

In mid-2007, AnGes reported positive results following an interim analysis of data from the first 41 subjects to complete the Phase 3 CLI trial in Japan. In the trial, 40 subjects with CLI were evaluated for efficacy. The primary endpoints, improvement of rest pain or ischemic ulcer size, at 12 weeks post dosing, showed 30.8% improvement in the placebo group and 70.4% improvement in the treatment group, a statistically significant difference. Based on the findings that the primary efficacy endpoint in the trial had been achieved with high statistical significance compared to a placebo and that there were no major safety concerns related to treatment in 41 patients evaluated, an Independent Data Monitoring Committee recommended stopping the trial early to prevent potential ethical issues involving the subjects in the placebo group. AnGes filed an application for Japanese marketing approval in March 2008. In September 2010, AnGes announced that after a series of extensive consultations with the Japanese Pharmaceuticals and Medical Devices Agency, it had decided to conduct an additional clinical trial of Collatogene and that in the interim it would be withdrawing its NDA in Japan.

In December 2010, AnGes released long-term follow-up data from its Phase 3 CLI trial in Japan. The follow-up analysis was performed 3 years after gene delivery. The rate of lower limb amputation after 1 year in patients with CLI is typically 30%. The results of the study showed lower rates of lower limb amputation after administration of Collatogene: 5.4% after one year, 5.4% after two years, and 9.2% after three years. Additionally, the mortality rate was 5.1% after one year, 15.7% after two years, and 26.6% after three years. AnGes also reported that there were no clinically significant adverse events that were suspected of being related to gene therapy.

AnGes has obtained a SPA from the FDA for a Phase 3 clinical trial of its Collatogene angiogenesis product for patients with CLI. The study will be multinational, randomized and placebo-controlled with a target population of 560 patients. The Phase 3 trial will enroll no option as well as poor option patients with chronic and severe ischemia of the lower limb. No option patients are those unable to receive an endovascular intervention or surgical bypass procedure due to inflow, conduit or outflow reasons or due to a severe and irreversible co-morbidity where surgery is contraindicated. Poor option patients are those unable to receive an endovascular

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intervention and at high risk for bypass surgery due to their vascular anatomy or severe co-morbid disease. AnGes believes inclusion of poor option patients will open the clinical trial to at least three to four times as many target patients compared to other trials which only include no option patients.

The agreement with AnGes expires upon the expiration of last to expire of the patent rights licensed to AnGes, or when the patent rights licensed to AnGes are held invalid or unenforceable, unless earlier terminated as set forth in the agreement. We may terminate the agreement early upon the bankruptcy or insolvency of, or the material breach of the agreement by, AnGes, upon prior written notice to AnGes. AnGes may terminate the agreement early upon prior written notice to us. Under the license agreement, we received an initial upfront payment of \$1.0 million, and in 2008 we received an additional payment of \$1.0 million. Further development may lead to additional milestone and royalty payments.

Sanofi-aventis. In 1999, sanofi-aventis began testing the DNA delivery of a gene encoding fibroblast growth factor 1, or FGF-1, an angiogenic growth factor, in patients with CLI. In 2000, sanofi-aventis licensed the rights to our core DNA delivery technology for cardiovascular applications using FGF-1.

Sanofi-aventis conducted a double-blind, placebo-controlled Phase 2 trial of its FGF-1 plasmid-based therapeutic, or NV1FGF, in the United States and Europe. In March 2006, sanofi-aventis released encouraging data from the Phase 2 trial demonstrating improvement in amputation-free survival in patients with CLI. In 2007, sanofi-aventis announced that it had begun a 500 patient global Phase 3 study of NV1FGF. The trial was conducted in patients with CLI, with combined trial endpoints of major amputation or death. In September 2010, sanofi-aventis announced that NV1FGF did not meet the primary endpoint in the global Phase 3 trial and that it is evaluating all options with respect to NV1FGF development in light of the Phase 3 clinical trial results.

Our agreement with sanofi-aventis specifies that we are eligible to receive milestone payments plus royalties if and when products advance through commercialization. The agreement with sanofi-aventis expires on the expiration of sanofi-aventis' obligation to pay royalties under the agreement. The obligation to pay royalties is the longer of seven years after the first commercial sale or when the patent rights licensed to sanofi-aventis are held invalid or unenforceable, unless earlier terminated as set forth in the agreement. We may terminate the agreement early for an uncured, material breach of the agreement by sanofi-aventis, upon prior written notice to sanofi-aventis. Sanofi may terminate the agreement early upon prior written notice us.

Merck. In 1991, we entered into an agreement with Merck, which was subsequently amended, providing Merck with certain exclusive rights to develop and commercialize vaccines using our core DNA delivery technology for specified human diseases. Under the agreement, as amended, Merck licensed our core DNA delivery technology for use in preventive and therapeutic human infectious disease vaccines.

In 2005, Merck exercised an option related to three cancer targets that were granted under an amendment to the agreement. In 2008, Merck initiated a Phase 1 clinical trial of a candidate vaccine based on our DNA gene delivery technology and encodes human telomerase reverse transcriptase, or hTERT. As a result of the ongoing development of this vaccine, we received milestone payments of \$1.5 million and \$1.0 million in 2009 and 2008, respectively.

Merck also has rights to use the licensed technology for HIV, hepatitis C virus, and hepatitis B virus. Merck is obligated to pay fees if certain research milestones are achieved, and royalties on net sales if any products covered by our agreement with Merck are commercialized. The agreement with Merck expires on the expiration of Merck's obligation to pay royalties under the agreement. The obligation to pay royalties is the longer of five years after the first commercial sale or upon the expiration of last to expire of the patent rights licensed to Merck, or when the patent rights licensed to Merck are held invalid or unenforceable, unless earlier terminated as set forth in the agreement. We may terminate the agreement early upon the bankruptcy or insolvency of, or a material breach of the agreement by, Merck, upon prior written notice to Merck. Merck may terminate the agreement early upon prior written notice to us.

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As of December 31, 2010, the aggregate potential milestone payments that we were eligible to receive under each of our out-license agreements with AnGes, sanofi-aventis and Merck was equal to approximately \$3.3 million, \$5.0 million and \$36.0 million, respectively. These amounts assume that all remaining milestones associated with the milestone payments are met. Although we believe that some of the milestones contained in these out-license agreements may be achieved, it is highly unlikely that a significant number of them will be achieved. Because the milestones are highly contingent and we have limited control over whether the development and regulatory milestones will be achieved, we are not in a position to reasonably estimate how much, if any, of the potential milestone payments will ultimately be received, or when. Additionally, under these out-license agreements, many of the milestone events are related to progress in clinical trials which will take several years to achieve.

We are also eligible to receive royalty payments under these out-license agreements based on net sales of any products which incorporate the out-licensed technology. In each of our out-license agreements with AnGes, Sanofi-aventis and Merck, these royalties are based on percentages of net sales in the single digit range. Our receipt of any royalty payments under our out-license agreements is contingent upon the licensee successfully developing and commercializing products incorporating the licensed technology, and we have limited control over our licensee's efforts in this regard. Consequently, we are not in a position to reasonably estimate when or to what extent we will receive any royalty payments under our out-license agreements.

Aqua Health. In 2003, we granted a non-exclusive license to Aqua Health for use in Canada of our core DNA delivery technology in a vaccine against a disease that affects both wild and farm-raised fish. In 2005, Aqua Health received notification of approval from the Canadian Food Inspection Agency to sell its proprietary product, Apex[®]-IHN, a DNA vaccine to protect farm-raised salmon against IHNV. We believe this approval is an important step in the validation of our DNA delivery technology. Aqua Health pays royalties to us on sales of the vaccine.

Merial. In 2004, we granted an exclusive license to Merial for use of our core DNA delivery technology in a therapeutic vaccine designed to aid in extending survival time of dogs with oral melanoma. Under the agreement, Merial is responsible for research and development activities. In March 2009, Merial received approval from the USDA to market the DNA vaccine, now called ONCEPT[®]. Merial pays royalties to us on sales of the vaccine.

Academic Collaborators. We also have granted non-exclusive, academic licenses to our DNA delivery technology patent estate to 11 leading research institutions including Stanford, Harvard, Yale and the Massachusetts Institute of Technology. The academic licenses are intended to encourage widespread commercial use of our innovative DNA delivery technologies in the development of new antibodies, vaccines, therapeutic proteins, and diagnostics. The academic licenses allow university researchers to use our technology free of charge for educational and internal, non-commercial research purposes. In exchange, we have the option to exclusively license from the universities potential commercial applications stemming from their use of the technology on terms to be negotiated.

In-licensing

CytRx. In 2001, we entered into an exclusive agreement with CytRx Corporation, or CytRx, which grants us rights to use or sublicense CytRx's poloxamer technology to enhance viral or non-viral delivery of polynucleotides in all unexcluded preventive and therapeutic human and animal health applications, including CMV. In addition, the agreement permits our use of CytRx's technology to enhance the delivery of proteins in prime-boost vaccine applications that involve the use of polynucleotides. As part of the agreement, we made a \$3.8 million up-front payment and agreed to make potential future milestone and royalty payments.

The agreement with CytRx expires upon the expiration of our royalty obligations, unless earlier terminated as set forth in the agreement. Each party may terminate the agreement early upon the bankruptcy or insolvency of, or the material breach of the agreement by, the other party, upon prior written notice to the other party. Subject to certain conditions, we may terminate the agreement early upon prior written notice to CytRx.

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City of Hope. In 2003, we licensed from the City of Hope on an exclusive basis various U.S. patents that provide protection for CMV related polynucleotide based vaccines, including our TransVax[®] and CymVectin[®] vaccine candidates under two separate licensing agreements. As of December 31, 2010, we had paid the City of Hope \$0.4 million under the agreement. The agreement expires upon the last to expire of the patent rights licensed by us under the agreement, unless earlier terminated as set forth in the agreement. City of Hope may terminate the agreement early, in accordance with notice provisions set forth in the agreement, if we cease to operate, fail to make payments when due or materially breach the agreement. Subject to certain conditions, we may terminate the agreement early at any time upon prior written notice to the City of Hope. We are also obligated to pay a low double-digit percentage of any payments we receive from the sub-license of products that incorporate the licensed technology.

Wisconsin Alumni Research Foundation. Under a 1989 research agreement, scientists at the University of Wisconsin, Madison, and our scientists co-invented a core technology related to intramuscular DNA administration. In 1991, we licensed from the WARF its interest in that technology. Pursuant to the license agreement with the WARF, we paid the WARF an initial license fee and agreed to pay the WARF up to 10% of certain initial upfront monetary payments and a small percentage of some royalty payments received from third parties under sublicense agreements. As of December 31, 2010, we had paid the WARF an aggregate of \$2.9 million under this agreement. The agreement expires once we have fulfilled our royalty obligations thereunder, unless earlier terminated as set forth in the agreement. The WARF may terminate this agreement early, in accordance with notice provisions set forth in the agreement, if we fail to make payments when due, materially breaches the agreement or if we commit any act of bankruptcy or become insolvent. Subject to certain conditions, we may terminate the agreement early at any time upon prior written notice to the WARF.

University of Michigan. In 1992, we licensed from the University of Michigan rights to various U.S. and international patents that provide additional protection for Allovectin[®] related to the injection of DNA-based therapeutics into tumors. In July 2005, we amended the agreement to exclude certain patents. In February 2006, we entered into an additional agreement with the University of Michigan which provides for rights to a composition of matter patent related to a polycistronic plasmid and the use of this plasmid for the treatment of solid tumors, which we believe provides additional protection for Allovectin[®].

As of December 31, 2010, we have paid the University of Michigan an aggregate of \$0.5 million under our 1992 agreement with the University of Michigan. The agreement expires upon the last to expire of the patent rights licensed by us under the agreement, unless earlier terminated as set forth in the agreement. Either party may terminate the agreement early, in accordance with notice provisions set forth in the agreement, upon material breach of the agreement by the other party. Subject to certain conditions, we may terminate the agreement early at any time upon prior written notice to the University of Michigan.

As of December 31, 2010, we had paid the University of Michigan only de minimus amounts under our 2006 agreement with the University of Michigan. The agreement expires upon the last to expire of the patent rights licensed by us under this agreement, unless earlier terminated as set forth in the agreement. The University of Michigan may terminate the agreement early, in accordance with notice provisions set forth in the agreement, if we cease to operate, fail to make payments when due or materially breach the agreement. Subject to certain conditions, we may terminate the agreement early at any time upon prior written notice to the University of Michigan.

As of December 31, 2010, the aggregate potential milestone payments that we could be obligated to pay under our in-license agreements with CytRx and the WARF, our 1992 in-license agreement with the University of Michigan and our 2006 in-license agreement with the University of Michigan was equal to approximately \$2.3 million, \$5.1 million, \$38,000 and \$30,000, respectively. These amounts assume that all remaining milestones associated with the milestone payments are met. Although we believe that some of the milestones contained in the in-license agreements may be achieved, it is highly unlikely that a significant number of them will be achieved. Because the milestones are highly contingent and we have limited control over whether the

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regulatory milestones will be achieved, we are not in a position to reasonably estimate how much, if any, of the potential milestone payments will ultimately be paid, or when. Additionally, under these in-license agreements, many of the milestone events are related to progress in clinical trials which will take several years to achieve.

Under these in-license agreements, we may also be obligated to pay royalties based on net sales of any products which incorporate the in-licensed technology. In each of our in-license agreements with City of Hope, CytRx, the WARF and the University of Michigan, these royalties are based on percentages of net sales in the single digit range. We may also be obligated to make payments under our in-license agreements with the WARF and the University of Michigan based on amounts we receive from sub-licensees, if any. Our obligations to pay any royalty payments under our in-license agreements is contingent upon the successful development and commercialization of products incorporating the in-licensed technology. Before any products incorporating the in-licensed technology may be sold, such products must be approved by U.S. or foreign regulatory authorities, which will require a substantial amount of additional research and development. Even if such product candidates are advanced through clinical trials, the results of such trials may not support approval by the FDA or comparable foreign agencies. Consequently, we are not in a position to reasonably estimate when or to what extent we will be obligated to pay any royalties under our in-license agreements.

Contract Manufacturing

IPPOX Foundation

In 2010, we entered into an agreement to manufacture plasmid DNA vaccines against HIV under a \$2.4 million contract with the IPPOX Foundation, a collaborating institution for the Poxvirus Vaccine Regimen Design led by the Centre Hospitalier Universitaire Vaudois under the auspices of the Collaboration for AIDS Vaccine Discovery. We delivered the vaccine and recognized \$2.4 million in revenue related to this contract in 2010.

Navy Medical Research Center

In 2008, we entered into a contract with the NMRC to manufacture a dengue DNA vaccine formulated with our Vaxfectin® adjuvant. The NMRC plans to conduct preclinical and Phase 1 evaluation of the vaccine. In support of the program, we manufactured the vaccine and the adjuvant under a \$1.3 million contract, and provided regulatory and clinical expertise. The dengue vaccine was delivered to the NMRC in 2009. We do not have any ongoing rights to NMRC's dengue DNA vaccine.

Manufacturing Process Development

In 2005, we were awarded funding for a one-year, \$0.5 million project for the Defense Advanced Research Projects Agency of the U.S. Department of Defense. The award funded feasibility studies of a new approach for rapidly manufacturing large quantities of DNA vaccines. In 2007, we were awarded funding for a three-year, \$6.0 million grant from the NIAID for further development of a DNA vaccine manufacturing process with the potential to produce several million doses of vaccines in a matter of days. The grant period was extended to allow preclinical development to continue for a fourth year. Our RapidResponse DNA vaccine manufacturing platform is intended to significantly reduce the time required to develop, manufacture and deploy vaccines against emerging diseases during the early stages of an infectious outbreak. The RapidResponse platform produces a small segment of DNA, called a linear expression cassette, which includes only those DNA sequences essential for the specific vaccine. The bacterial fermentation process typically used for DNA vaccines produces a closed loop of DNA, called a plasmid, which must include DNA sequences required in the manufacturing process.

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Conventional vaccine development and manufacturing methods require prolonged effort after the emergence of a new pathogen for production of even a single dose for testing. Current DNA vaccine development and manufacturing processes allow initial production of vaccines in as little as three months after selection of a gene sequence associated with a pathogen, but quantities are limited by the batch-processing capacity of available manufacturing equipment. By using a cell-free manufacturing process, we believe that the RapidResponse DNA platform can overcome the time, capacity and cost challenges of manufacturing conventional vaccines for diseases such as influenza, which use killed or disabled viruses grown in chicken eggs or via cell culture, requiring months of production time in large, dedicated facilities.

NIH Vaccine Research Center

The NIH through its Dale and Betty Bumpers Vaccine Research Center, or VRC, has clinical stage vaccine programs based on our technology for HIV. The NIH has also completed Phase 1 studies based on our technology for Ebola, West Nile virus, or WNV, and SARS. We were granted exclusive options to exclusively or nonexclusively license any inventions developed by the NIH under the respective CRADAS for HIV, Ebola or WNV. The options and licenses that were exercised under the CRADAS have since expired or terminated due to the discontinuation of these programs by the NIH. The NIH has transferred the Investigational New Drug application for its SARS DNA vaccine to us and we continue to evaluate our options in continuing the development of that vaccine.

Based on encouraging results in prior studies, the NIH initiated a Phase 2a clinical trial in 2005 of the prime-boost vaccine approach against HIV in several hundred patients. In 2007, the NIH released results from its Phase 2a HIV vaccine trial using a DNA prime-adenoviral vector boost approach. The results showed the vaccine regimen was safe and well-tolerated, and was effective in inducing T-cell immune responses in up to 70% of the vaccine recipients. The NIH planned to further test the DNA prime-adenoviral vector boost approach in a trial known as the PAVE 100 study, which was designed to enroll 8,500 volunteers. We manufactured the DNA prime component of the vaccine to be used in the PAVE 100 study. The study was to begin recruitment in October 2007, but was postponed following the NIH's review of interim data from an unrelated Phase 2b trial known as the STEP study which utilized an adenoviral vector vaccine alone. The NIH concluded that the adenoviral vector vaccine failed to prevent HIV infection or reduce viral load, and the vaccinated group in the STEP study exhibited a higher incidence of infection than the placebo group. In July 2008, after soliciting and considering broad input from the scientific and HIV communities, the NIH determined that it would not conduct the PAVE 100 study.

In August 2009, the NIH opened a smaller version of the PAVE 100 study, HVTN 505. The HVTN 505 study is designed to enroll 1,350 HIV-seronegative men in a Phase 2b trial of a prime-boost vaccine regimen for HIV using three doses of DNA vaccine, previously manufactured by us for the PAVE 100 study, followed by a single dose of adenoviral vector vaccine. Enrollment in this study is ongoing.

Intellectual Property

Patents and other proprietary rights are essential to our business. We file patent applications to protect our technologies, inventions, and improvements to our inventions that we consider important to the development of our business. We believe we have a comprehensive patent portfolio in the United States and in key foreign markets. We also rely upon trade secrets, know-how, continuing technological innovations and licensing opportunities to develop and maintain our competitive position.

Our patents and patent applications cover, for example, DNA delivery for immunization and delivery of therapeutic proteins, specific DNA constructs and formulations of gene-based product candidates, methods for producing pharmaceutical-grade DNA, and several families of lipid molecules and their uses in DNA delivery, as described more fully below:

Core DNA Delivery Technology. We and the WARF co-own rights to issued U.S. patents covering our core DNA delivery technology, including patents on methods of administering DNA sequences for the

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purposes of expressing therapeutic proteins or for inducing immune responses and the administration of DNA sequences into blood vessels and the heart. In 1991, the WARF exclusively licensed its rights in the core DNA delivery technology to us. All of our clinical programs are dependent upon this platform technology. The remaining patents in this family expire between December 3, 2013 and December 30, 2014, however, under the Hatch-Waxman Act, a patent term extension for up to five years may be available in the U.S. under certain conditions.

Lipid Technologies. We are the sole assignee of issued U.S. patents covering numerous examples of cationic lipid compounds that are used to facilitate delivery of gene therapies to some tissues. These patented compounds include the lipids contained in our Allovectin[®] product candidate, and the last to expire patent related to this family is scheduled to expire on October 17, 2012. Our Allovectin[®] product candidate, pandemic influenza vaccine candidates, CyMVectin[™] prophylactic vaccine candidate for CMV as well as our Vaxfectin[®] adjuvant are protected in-part by lipid technology and/or lipid compound patents that expire between May 18, 2011 and March 24, 2020. Patent protection of these key lipids also has been obtained in Europe, Canada and Japan. Under the Hatch-Waxman Act, a patent term extension for up to 5 years may be available in the U.S. under certain conditions.

Specific DNA Therapeutics. We have supplemented the broad patent coverage described above with patents covering specific product applications of our technologies. To date, we have received patents in the United States and Europe, and have patents pending in Canada and Japan, relating to codon-optimized polynucleotide-based vaccines against human CMV infection. The issued patents expire between December 19, 2023 and May 12, 2025. These patents further protect both our TransVax[™] therapeutic vaccine candidate for CMV as well as our CyMVectin[™] prophylactic vaccine candidate for CMV. We also have an issued U.S. patent relating specifically to our pandemic influenza vaccine programs and foreign counterparts pending in Australia, Canada, Europe and Japan all of which will expire on May 18, 2025. We and the University of Michigan are the co-assignees of patents directed towards compositions of matter related to a polycistronic plasmid and the use of this plasmid for the treatment of solid tumors, which we believe provide additional protection for Allovectin[®]. In 2006, the University of Michigan exclusively licensed its rights in these patents to us. These patents have issued in the U.S., Canada, Europe and Japan, and expire between May 27, 2014 and June 8, 2016. Our therapeutic vaccine candidate for herpes simplex type 2 virus is further augmented by an issued U.S. patent and foreign counterparts pending in Australia, Canada, Europe and Japan all of which will expire on July 20, 2027. These patents are co-owned with the University of Washington. Under the Hatch-Waxman Act, a patent term extension for up to 5 years may be available in the U.S. under certain conditions.

DNA Process Technologies. As a result of our pioneering efforts to develop the use of DNA as a therapeutic agent, we have also developed manufacturing processes for producing pharmaceutical-grade DNA. To date, we are the exclusive assignee of patents issued in the U.S. and granted in Japan and Europe covering various steps involved in the process of economically producing pure plasmids for pharmaceutical use. This provides a further level of protection to each of our ongoing programs. Patents within this category expire between February 1, 2014 and November 24, 2023. Under the Hatch-Waxman Act, a patent term extension for up to 5 years may be available under certain conditions.

Licensed DNA Delivery Technologies. We and the University of Michigan are the co-assignees of patents directed towards compositions of matter related to a polycistronic plasmid and the use of this plasmid for the treatment of solid tumors, which we believe provides additional protection for Allovectin[®]. In 2006, the University of Michigan exclusively licensed its rights in these patents to us. These patents have issued in the U.S., Canada, Europe and Japan, and expire between May 27, 2014 and June 8, 2016. Under the Hatch-Waxman Act, a patent term extension for up to 5 years may be available in the U.S. under certain conditions.

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During 2010, we were issued one U.S. patent, two Canadian patents, a European patent and a Australian patent related to our core DNA delivery technology, enhancements of that technology, and applications of that technology:

U.S. Patent No. 7,785,603, covering an influenza virus vaccine composition and methods of use, which expires May 18, 2025;

Canadian Patent No. 2,205,910 covering plasmids suitable for IL-2 expression which expires November 28, 2015;

Canadian Patent No. 2,375,727 covering cytofectin dimers and methods of use which expires May 26, 2020;

European Patent No. 1587816 covering codon-optimized polynucleotide-based vaccines against human CMV infection which expires December 19, 2023 ; and

Australian Patent 2005248361 covering an influenza virus vaccine composition and methods of use which expires May 18, 2025.

As of December 31, 2010, we were the assignee or co-assignee of 66 issued U.S. and foreign patents. We maintain our issued patents by paying maintenance fees to the patent office in each country when due. Where appropriate, we participate in legal proceedings to vigorously defend against the revocation or withdrawal of our patents. The scope and nature of these proceedings generally differ depending on the country in which they are initiated.

Among these issued patents, a granted patent in Europe related to our core DNA delivery technology was opposed by eight parties and revoked under an initial ruling. We appealed this decision and in December 2010 the Company's appeal was successful and the patent was reinstated by the Appeals Board and sent back to the Opposition Division for further processing. While this patent expired in March 2010 the reinstatement gives us the ability to prosecute any infringing activity that may have occurred prior to the patent expiring and within five years of initiation of the legal proceedings. We may use other issued patents and patent applications that are pending in Europe to protect our DNA technology. If we are not successful in defending our patents, we may lose all or part of our proprietary rights related to those patents in these geographic regions.

As of December 31, 2010, we were also prosecuting 76 pending patent applications in the United States and in foreign countries that cover various aspects of our proprietary technologies, not including patent applications for which we are a co-assignee and that are being prosecuted by our partners. One of the pending foreign patent applications is an international patent application under the Patent Cooperation Treaty, which preserves our right to pursue national-phase patent applications in a large number of foreign countries.

See Item 3 Legal Proceedings, for a discussion of patent-related disputes, oppositions, and prosecution status. See also Risk Factors Our patents and proprietary rights may not provide us with any benefit and the patents of others may prevent us from commercializing our products, and The legal proceedings to obtain and defend patents, and litigation of third-party claims of intellectual property infringement, could require us to spend money and could impair our operations.

Commercialization and Manufacturing

Because of the broad potential applications of our technologies, we intend to develop and commercialize products both on our own and through our collaborators and licensees. We intend to develop and commercialize products in well-defined specialty markets, such as infectious diseases, oncology and other life-threatening diseases. Where appropriate, we intend to rely on strategic marketing and distribution alliances.

We believe our plasmids can be produced in commercial quantities through uniform methods of fermentation and processing that are applicable to all plasmids. In addition, our formulations consist of components that are synthesized chemically using traditional, readily scalable organic synthesis procedures.

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We produce and supply our own plasmids for all of our research needs and clinical trials and intend to produce sufficient supplies for all foreseeable clinical investigations. In 2002, we signed a 15-year lease on our current facility, which we believe will be sufficient for our foreseeable commercial manufacturing requirements. The facility received a California Food and Drug Branch manufacturing facility license and began production in 2004. We also engage in contract manufacturing of plasmid investigational products for selected clients.

Competition

We are aware of several development-stage and established enterprises, including major pharmaceutical and biotechnology firms, which are actively engaged in infectious disease vaccine research and development. These include sanofi-aventis, Novartis, GlaxoSmithKline plc, MedImmune, Inc., a wholly owned subsidiary of AstraZeneca, Merck and Pfizer Inc., among others. We may also experience competition from companies that have acquired or may acquire technologies from companies, universities and other research institutions. These companies may develop proprietary technologies which may materially and adversely affect our business.

In addition, a number of companies are developing products to address the same diseases that we are targeting. For example, sanofi-aventis, MedImmune, Roche, GlaxoSmithKline, AlphaVax in conjunction with Novartis, and others have products or development programs for CMV treatment and prevention. Bristol-Myers Squibb, Plexxikon in conjunction with Roche, GlaxoSmithKline, Amgen through its acquisition of BioVex, Celgene and others are developing treatments for melanoma. If these or any other companies develop products with efficacy or safety profiles significantly better than our products, we may not be able to commercialize our products, and sales of any of our commercialized products could be harmed.

Some of our competitors and potential competitors have substantially greater product development capabilities and financial, scientific, marketing and human resources than we do. Competitors may develop products earlier, obtain FDA approvals for products more rapidly, or develop products that are more effective than those under development by us. We will seek to expand our technological capabilities to remain competitive, however, research and development by others may render our technologies or products obsolete or noncompetitive, or result in treatments or cures superior to ours.

Our competitive position will be affected by the disease indications addressed by our product candidates and those of our competitors, the timing of market introduction for these products and the stage of development of other technologies to address these disease indications. For us and our competitors, proprietary technologies, the ability to complete clinical trials on a timely basis and with the desired results, and the ability to obtain timely regulatory approvals to market these product candidates are likely to be significant competitive factors. Other important competitive factors will include the efficacy, safety, ease of use, reliability, availability and price of products and the ability to fund operations during the period between technological conception and commercial sales.

The FDA and other regulatory agencies may expand current requirements for public disclosure of DNA-based product development data, which may harm our competitive position with foreign and U.S. companies developing DNA-based products for similar indications.

Government Regulation

Any products we develop will require regulatory clearances prior to clinical trials and additional regulatory approvals prior to commercialization. New gene-based products for vaccine or therapeutic applications are subject to extensive regulation by the FDA and comparable agencies in other countries. The precise regulatory requirements with which we will have to comply are uncertain at this time due to the novelty of the gene-based products and indications, or uses, that are currently under development. Our potential products will be regulated either as biological products or as drugs. In the United States, drugs are subject to regulation under the Federal Food, Drug and Cosmetic Act, or the FDC Act. Biological products, in addition to being subject to provisions of

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the FDC Act, are regulated in the United States under the Public Health Service Act. Both statutes and related regulations govern, among other things, testing, manufacturing, safety, efficacy, labeling, storage, record keeping, advertising, and other promotional practices.

Obtaining FDA approval is a costly and time-consuming process. Generally, FDA approval requires that preclinical studies be conducted in the laboratory and in animal model systems to gain preliminary information on efficacy and to identify any major safety concerns. The results of these studies are submitted as a part of an IND application which the FDA must review and allow before human clinical trials can start. The IND application includes a detailed description of the proposed clinical investigations.

A company must submit an IND application for each proposed product and must conduct clinical studies to demonstrate the safety and efficacy of the product necessary to obtain FDA approval. The FDA receives reports on the progress of each phase of clinical testing and may require the modification, suspension, or termination of clinical trials if an unwarranted risk is presented to patients.

To obtain FDA approval prior to marketing a pharmaceutical product in the United States typically requires several phases of clinical trials to demonstrate the safety and efficacy of the product candidate. Clinical trials are the means by which experimental treatments are tested in humans, and are conducted following preclinical testing. Clinical trials may be conducted within the United States or in foreign countries. If clinical trials are conducted in foreign countries, the products under development as well as the trials are subject to regulations of the FDA and/or its counterparts in the other countries. Upon successful completion of clinical trials, approval to market the treatment for a particular patient population may be requested from the FDA in the United States and/or its counterparts in other countries.

Clinical trials for therapeutic products are normally done in three phases. Phase 1 clinical trials are typically conducted with a small number of patients or healthy subjects to evaluate safety, determine a safe dosage range, identify side effects, and, if possible, gain early evidence of effectiveness. Phase 2 clinical trials are conducted with a larger group of patients to evaluate effectiveness of an investigational product for a defined patient population, and to determine common short-term side effects and risks associated with the drug. Phase 3 clinical trials involve large scale, multi-center, comparative trials that are conducted to evaluate the overall benefit-risk relationship of the investigational product and to provide an adequate basis for product labeling. In some special cases where the efficacy testing of a product may present a special challenge to testing in humans, such as in the case of a vaccine to protect healthy humans from a life-threatening disease that is not a naturally occurring threat, effectiveness testing may be required in animals.

After completion of clinical trials of a new product, FDA marketing approval must be obtained. If the product is regulated as a biologic, a BLA, is required. If the product is classified as a new drug, a New Drug Application, or NDA, is required. The NDA or BLA must include results of product development activities, preclinical studies, and clinical trials in addition to detailed chemistry, manufacturing and control information.

Applications submitted to the FDA are subject to an unpredictable and potentially prolonged approval process. Despite good-faith communication and collaboration between the applicant and the FDA during the development process, the FDA may ultimately decide, upon final review of the data, that the application does not satisfy its criteria for approval or requires additional product development or further preclinical or clinical studies. Even if FDA regulatory clearances are obtained, a marketed product is subject to continual review, and later discovery of previously unknown problems or failure to comply with the applicable regulatory requirements may result in restrictions on the marketing of a product or withdrawal of the product from the market as well as possible civil or criminal sanctions.

Before marketing clearance for a product can be secured, the facility in which the product is manufactured must be inspected by the FDA and must comply with cGMP regulations. In addition, after marketing clearance is secured, the manufacturing facility must be inspected periodically for cGMP compliance by FDA inspectors, and, if the facility is located in California, by inspectors from the Food and Drug Branch of the California Department of Health Services.

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In addition to the FDA requirements, the NIH has established guidelines for research involving human genetic materials, including recombinant DNA molecules. The FDA cooperates in the enforcement of these guidelines, which apply to all recombinant DNA research that is conducted at facilities supported by the NIH, including proposals to conduct clinical research involving gene therapies. The NIH review of clinical trial proposals and safety information is a public process and often involves review and approval by the Recombinant DNA Advisory Committee, or RAC, of the NIH.

Sponsors of clinical trials are required to register, and report results for, all controlled, clinical investigations, other than Phase 1 investigations, of a product subject to FDA regulation. Trial registration may require public disclosure of confidential commercial development data resulting in the loss of competitive secrets, which could be commercially detrimental.

We also are subject to various federal, state and local laws, regulations, and recommendations relating to safe working conditions, laboratory and manufacturing practices, the experimental use of animals, and the use and disposal of hazardous or potentially hazardous substances, including radioactive compounds and infectious disease agents, used in connection with our research. The extent of government regulation that might result from any future legislation or administrative action cannot be accurately predicted.

Employees

As of December 31, 2010, we had 114 full-time employees, including 15 with doctorate degrees. Of these full-time employees, 93 were engaged in, or directly support, research and development and manufacturing activities, and 21 were in general and administrative positions. A significant number of our management and other employees have prior experience with pharmaceutical and/or biotechnology companies. None of our employees is covered by collective bargaining agreements, and our management considers relations with our employees to be good.

Executive Officers of the Registrant

Our executive officers and other executives are as follows:

Name	Age ¹	Position
Vijay B. Samant ²	58	President, Chief Executive Officer and Director
Jill M. Broadfoot ²	49	Senior Vice President, Chief Financial Officer and Secretary
Alain P. Rolland, Pharm.D., Ph.D. ²	51	Executive Vice President, Product Development
Igor P. Bilinsky, Ph.D.	38	Senior Vice President, Corporate Development
Richard T. Kenney, M.D.	52	Vice President, Clinical Development
Larry R. Smith, Ph.D.	50	Vice President, Vaccine Research

¹ As of December 31, 2010.

² Executive officer.

Vijay B. Samant joined us as President and Chief Executive Officer in November 2000. Previously, he held various positions at Merck, from 1977 to 2000. From 1998 to 2000, he was Chief Operating Officer of the Merck Vaccine Division. From 1990 to 1998, he served in the Merck Manufacturing Division as Vice President of Vaccine Operations, Vice President of Business Affairs and Executive Director of Materials Management. From 1977 to 1990, Mr. Samant held a variety of positions of increasing responsibility in manufacturing, process engineering, production planning and control, business development and loss prevention in several Merck operating divisions. Mr. Samant holds a bachelor's degree in chemical engineering from the University of Bombay, India, an M.S. degree in chemical engineering from Columbia University and an M.B.A. degree from the Sloan School of Management at the Massachusetts Institute of Technology. Mr. Samant is a member of the Board of Trustees of the National Foundation for Infectious Diseases and the International Vaccine Institute in Seoul, South Korea and was a director of the Aeras Global TB Vaccine Foundation.

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Jill M. Broadfoot joined us as Vice President, Chief Financial Officer and Secretary in October 2004 and was named Senior Vice President, Chief Financial Officer and Secretary in January 2009. From February 1999 until joining us, Ms. Broadfoot held various positions at DJO Incorporated, a publicly-traded medical device company, most recently as Vice President of Finance and Controller with broad responsibilities in finance, accounting, treasury, risk management, and corporate governance. From September 1994 until joining DJO Incorporated, Ms. Broadfoot served as an audit manager at Ernst & Young LLP, where her clients included life sciences, computer software and telecommunications companies as well as government contractors. From June 1990 until joining Ernst & Young, she was Division Controller at Medical Imaging Centers of America, Inc., a chain of freestanding imaging centers and mobile imaging centers, where she held divisional accounting and financial reporting responsibilities. Ms. Broadfoot received her bachelor's degree in business administration and accounting from San Diego State University, and is a Certified Public Accountant.

Alain P. Rolland, Pharm.D., Ph.D., joined us as Vice President, Product Development in August 2002. He was named Senior Vice President, Product Development in April 2004 and Executive Vice President, Product Development in January 2009. Dr. Rolland was Senior Vice President of Pre-Clinical Research and Development, and Head of The Woodlands Center of Valentis, Inc. from 2000 to 2002. From 1993 to 1999, he served in several positions at a predecessor company to Valentis, Inc., GeneMedicine, Inc., where he progressed from Director of Gene Delivery to Vice President of Research. From 1989 to 1993, he was the Head of Formulation Research at the Research & Development Center of Galderma International in France. Prior to that, he was a scientist at the Advanced Drug Delivery Research Center of Ciba Geigy Pharmaceuticals in the United Kingdom. He received his Pharm.D., D.E.A., and Ph.D. degrees from Rennes University, France. Dr. Rolland holds several U.S. and European patents on advanced drug and gene delivery for medical applications. He has authored numerous publications and books in the area of nonviral gene delivery resulting from his active career in research and development. He also serves on the editorial board of several journals and was the founding Editor-in-Chief of *Current Pharmaceutical Biotechnology*.

Igor P. Bilinsky, Ph.D., joined us as Senior Vice President, Corporate Development in October 2010. Prior to joining Vical, Dr. Bilinsky was Vice President, Business Development and Special Operations at Halozyme Therapeutics, Inc. since January 2008, after joining the company in 2007 as Executive Director, Corporate Development and Special Operations. From 2005 to 2007, Dr. Bilinsky was Chief Executive Officer of Androclus Therapeutics, Inc., a privately-held biotechnology company developing novel therapeutics for autoimmune and inflammatory diseases. He joined Androclus in 2004 as Chief Operating Officer. From 1999 to 2004, Dr. Bilinsky served in positions of increasing responsibility as a management consultant, project leader and ultimately as principal in the healthcare practice of the Boston Consulting Group, where he advised companies in the biotechnology, pharmaceutical and life science industries on business strategy, operational performance and mergers and acquisitions. Prior to joining the Boston Consulting Group, Dr. Bilinsky also worked in research positions at Symyx Technologies, Inc. and the Massachusetts Institute of Technology, or MIT, Lincoln Laboratory. Dr. Bilinsky received his B.S. degree in physics from the Moscow Institute of Physics and Technology and his Ph.D. degree in physics from MIT.

Richard T. Kenney, M.D., joined us as Vice President, Clinical Development, in December 2009. Prior to joining us, Dr. Kenney held key positions in influenza and biodefense vaccine development at GSK Biologicals (formerly ID Biomedical) from 2005 to 2009, most recently as Senior Director of Global Clinical R&D, Vaccines for Viral Diseases. His initial role at ID Biomedical was Vice President, Clinical & Regulatory Affairs. From 2001 to 2005, he served as Vice President, Clinical Development and then as Vice President, Medical & Regulatory Affairs at IOMAI Corporation. Dr. Kenney advanced through several positions from 1995 to 2001 as a researcher/reviewer at the U.S. Food and Drug Administration Center for Biologics Evaluation and Research, Office of Vaccine Research and Review. After completing his residency in internal medicine at Duke University Medical Center, Dr. Kenney pursued postdoctoral training at the NIAID, completing a fellowship in infectious diseases, and then in molecular parasitology and tropical medicine. He received board certifications in Internal Medicine and Infectious Diseases. He graduated with honors from George Washington University and earned his M.D. degree at Harvard Medical School in 1985.

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Larry R. Smith, Ph.D., joined us as Executive Director, Vaccinology in September 2003, and was named Vice President, Vaccine Research in October 2006. Prior to joining Vical, Dr. Smith was Director of Viral Vaccines Research at Wyeth Vaccines, where he oversaw the immunogenicity testing of various viral vaccines including a number of recombinant viral vectors. Prior to joining Wyeth in 1996, Dr. Smith was a Scientific Investigator at Immune Response, where he identified autoreactive T-cell targets in psoriasis and multiple sclerosis which led to the clinical testing of several therapeutic vaccine candidates. Dr. Smith received a B.S. degree in Biology from Purdue University, a Ph.D. in Microbiology and Immunology from the University of Texas Medical Branch, and was a postdoctoral fellow in the Immunology Department at Scripps Clinic and Research Foundation.

ITEM 1A. RISK FACTORS

You should consider carefully the risks described below, together with all of the other information included in this Annual Report on Form 10-K, and in our other filings with the SEC, before deciding whether to invest in or continue to hold our common stock. The risks described below are all material risks currently known, expected or reasonably foreseeable by us. If any of these risks actually occur, our business, financial condition, results of operations or cash flow could be seriously harmed. This could cause the trading price of our common stock to decline, resulting in a loss of all or part of your investment.

None of our independently developed product candidates has been approved for sale, and we have a limited number of independently developed product candidates in clinical trials. If we do not develop commercially successful products, we may be forced to curtail or cease operations.

All of our independently developed product candidates are either in research or development. We must conduct a substantial amount of additional research and development before any U.S. or foreign regulatory authority will approve any of our product candidates. Limited data exist regarding the efficacy of DNA vaccines or therapeutics compared with conventional vaccines or therapeutics. Results of our research and development activities may indicate that our product candidates are unsafe or ineffective. In this case, regulatory authorities will not approve them.

For example, our independently developed product candidates currently in clinical development include Allovectin[®], for which we announced the completion of enrollment of a Phase 3 clinical trial in 2010, TransVax[®], for which we reported results from a recently completed Phase 2 clinical study in 2010, and our H1N1 pandemic influenza vaccine, which is currently in the final stages of data collection and analysis for a Phase 1 clinical study, and is expected to be completed in the first quarter of 2011. We may not meet the primary endpoint of the Allovectin[®] trial for which a Special Protocol Assessment agreement is in place with the FDA. Our H1N1 pandemic influenza vaccine may not meet the endpoints in its clinical trial and we may not conduct additional TransVax[®] or H1N1 pandemic influenza vaccine trials, and the future trials, if any, may not demonstrate sufficient efficacy to support further product development.

Additionally, we are in early stages of development with other product candidates. These product candidates will require significant costs to advance through the development stages. If such product candidates are advanced through clinical trials, the results of such trials may not support approval by the FDA or comparable foreign agencies. Even if approved, our products may not be commercially successful, particularly if they do not gain market acceptance among physicians, patients, healthcare payers and relevant medical communities. If we fail to develop and commercialize our products, we may be forced to curtail or cease operations.

Our revenues partially depend on the development and commercialization of products in collaboration with others to whom we have licensed our technologies. If our collaborators or licensees do not successfully develop and commercialize products covered by these arrangements, or if we are unable to find collaborators or licensees in the future, we may not be able to derive revenues from these arrangements, we may lose opportunities to validate our DNA delivery technologies, or we may be forced to curtail our development and commercialization efforts in these areas.

We have licensed, and may continue to license, our technologies to corporate collaborators and licensees for the research, development and commercialization of specified product candidates. Our revenues partially depend

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upon the ability of these collaborators and licensees to successfully develop and commercialize products covered by these arrangements. In addition, we have two licensees, sanofi-aventis and AnGes, with product candidates in advanced stages of clinical development, for which we believe regulatory approval would provide important further validation of our DNA delivery technologies. The development and commercialization efforts of our collaborators and licensees are subject to the same risks and uncertainties described above with respect to our independently developed product candidates.

Some collaborators or licensees may not succeed in their product development efforts. It is possible that sanofi-aventis, AnGes or any of our other collaborators or licensees may be unable to obtain regulatory approval of product candidates using our technologies or successfully market and commercialize any such products for which regulatory approval is obtained. In September 2010, AnGes announced that after a series of extensive consultations with the Japanese Pharmaceuticals and Medical Devices Agency, it would be withdrawing its NDA in Japan. Also in September 2010, sanofi-aventis announced that NV1FGF, did not meet the primary endpoint in a global Phase 3 trial and that it is evaluating all options with respect to NV1FGF development in light of the Phase 3 clinical trial results. Other collaborators or licensees may not devote sufficient time or resources to the programs covered by these arrangements, and we may have limited or no control over the time or resources allocated by these collaborators or licensees to these programs. The occurrence of any of these events may cause us to derive little or no revenue from these arrangements, lose opportunities to validate our DNA delivery technologies, or force us to curtail or cease our development and commercialization efforts in these areas.

Our collaborators and licensees may breach or terminate their agreements with us, including some that may terminate their agreements without cause at any time subject to certain prior written notice requirements, and we may be unsuccessful in entering into and maintaining other collaborative arrangements for the development and commercialization of products using our technologies. If we are unable to maintain existing collaboration arrangements or enter into new ones, our ability to generate licensing, milestone or royalty revenues would be materially impaired.

Some of our independent product candidates and some of those under development by our sublicensees incorporate technologies we have licensed from others. If we are unable to retain rights to use these technologies, we or our sublicensees may not be able to market products incorporating these technologies on a commercially feasible basis, if at all.

We have licensed certain technologies from corporate collaborators and research institutions, and sublicensed certain of such technologies to others, for use in the research, development and commercialization of product candidates. Our product development efforts and those of our sublicensees partially depend upon continued access to these technologies. For example, we or our licensors may breach or terminate our agreements, or disagree on interpretations of those agreements, which could prevent continued access to these technologies. If we were unable to resolve such matters on satisfactory terms, or at all, we or our sublicensees may be unable to develop and commercialize our products, and we may be forced to curtail or cease operations.

A significant portion of our revenue is derived from agreements with government agencies, which are subject to termination and uncertain future funding.

We have entered into agreements with government agencies, such as the NIH and Navy Medical Research Center, and we intend to continue entering into these agreements in the future. For example, we receive grants from governmental agencies and have in the past entered into agreements to manufacture vaccines for such agencies. Our business is partially dependent on the continued performance by these government agencies of their responsibilities under these agreements, including adequate continued funding of the agencies and their programs. We have no control over the resources and funding that government agencies may devote to these agreements, which may be subject to annual renewal and which generally may be terminated by the government agencies at any time.

Government agencies may fail to perform their responsibilities under these agreements, which may cause them to be terminated by the government agencies. In addition, we may fail to perform our responsibilities under

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these agreements. Many of our government agreements are subject to audits which may occur several years after the period to which the audit relates. If an audit identifies significant unallowable costs, we could incur a material charge to our earnings or reduction in our cash position. As a result, we may be unsuccessful entering or ineligible to enter into future government agreements.

We apply for and have received funding from various government agencies. Eligibility of public companies to receive grants, such as Small Business Technology Transfer and Small Business Innovation Research grants, may be based on size and ownership criteria which are under review by the Small Business Administration, or SBA. As a result, our eligibility may change in the future, and additional funding from these sources may not be available.

We have a history of net losses. We expect to continue to incur net losses and we may not achieve or maintain profitability.

To date, we have not sold, or received approval to sell, any pharmaceutical products. We do not expect to sell any pharmaceutical products for at least the next several years. Our net losses were approximately \$30.4 million, \$28.6 million and \$36.9 million for the years ended December 31, 2010, 2009 and 2008, respectively. Moreover, we expect that our net losses will continue and may increase for the foreseeable future. We may not be able to achieve projected results if we generate lower revenues or receive lower investment income than expected, or we incur greater expenses than expected, or all of the above. We may never generate sufficient product revenue to become profitable. We also expect to have quarter-to-quarter fluctuations in revenues, expenses, and losses, some of which could be significant.

We may need additional capital in the future. If additional capital is not available, we may have to curtail or cease operations.

We may need to raise more money to continue the research and development necessary to bring our products to market and to establish marketing and additional manufacturing capabilities. We may seek additional funds through public and private stock offerings, government contracts and grants, arrangements with corporate collaborators, borrowings under lease lines of credit or other sources. We have on file two effective shelf registration statements that collectively allow us to raise up to an additional \$105.6 million from the sale of common stock, preferred stock, debt securities and/or warrants. However, we may not be able to raise additional funds on favorable terms, or at all. Conditions in the credit markets and the financial services industry may make equity and debt financing more difficult to obtain, and may negatively impact our ability to complete financing transactions. To the extent that we raise additional funds by issuing equity securities, our stockholders may experience significant dilution. Any debt financing, if available, may involve restrictive covenants, such as limitations on our ability to incur additional indebtedness and other operating restrictions that could adversely impact our ability to conduct our business.

In January 2010, we entered into a committed equity line of credit with Azimuth, under which we may sell to Azimuth, subject to certain limitations, up to \$25.0 million of our common stock over a 24-month period. Azimuth will not be obligated to purchase shares under the equity line of credit unless specified conditions are met, which include a minimum price of \$1.50 for our common stock. If we are unable to meet the specified conditions with respect to any sale of shares under the Azimuth equity line of credit, we may be unable to access this source of financing. Azimuth is also permitted to terminate the equity line of credit under certain circumstances.

If we are unable to obtain additional funds, we may have to scale back our development of new products, reduce our workforce or license to others products or technologies that we otherwise would seek to commercialize ourselves. The amount of money we may need would depend on many factors, including:

The progress of our research and development programs;

The scope and results of our preclinical studies and clinical trials; and

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The time and costs involved in: obtaining necessary regulatory approvals; filing, prosecuting and enforcing patent claims; scaling up our manufacturing capabilities; and the commercial arrangements we may establish.

The regulatory approval process is expensive, time consuming and uncertain, which may prevent us and our collaborators and licensees from obtaining required approvals for the commercialization of our products.

Our product candidates under development and those of our collaborators and licensees are subject to extensive and rigorous regulations by numerous governmental authorities in the United States and other countries. The regulatory approval process takes many years and will require us to expend substantial resources. For example, the FDA has provided only limited guidelines concerning the size and scope of clinical trials required for gene-based therapeutic and vaccine products.

Therefore, U.S. or foreign regulations could prevent or delay regulatory approval of our products or limit our and our collaborators and licensees ability to develop and commercialize our products. Delays could:

Impose costly procedures on our activities and those of our collaborators and licensees;

Diminish any competitive advantages that we or our products attain; or

Negatively affect our results of operations and cash flows.

We have no experience in filing a Biologics License Application, or BLA, or NDA, with the FDA. Because a BLA or NDA must be submitted to and approved by the FDA before any of our product candidates may be commercialized, our lack of experience may impede our ability to obtain FDA approval in a timely manner, if at all, which in turn would delay or prevent us from commercializing those products. Similarly, our lack of experience with respect to obtaining regulatory approvals in countries other than the United States may impede our ability to commercialize our products in those countries.

We believe that the FDA and comparable foreign regulatory bodies will regulate separately each product containing a particular gene depending on its intended use. Presently, to commercialize any product we and our collaborators and licensees must file a regulatory application for each proposed use. We and our collaborators and licensees must conduct clinical studies to demonstrate the safety and efficacy of the product necessary to obtain FDA or foreign regulatory authority approval. The results obtained so far in our clinical trials and those of our collaborators and licensees may not be replicated in ongoing or future trials, or the results may be subject to varying interpretation on whether they are sufficient to support approval for commercialization. This may prevent any of our product candidates from receiving approval for commercial sale.

We use recombinant DNA molecules in our product candidates, and therefore we and our collaborators and licensees also must comply with guidelines instituted by the NIH and its Office of Biotechnology Activities. The NIH could restrict or delay the development of our product candidates.

If any of our product candidates receive regulatory approval, the FDA or other foreign regulatory agencies may still impose significant restrictions on the indicated uses or marketing of our product candidates or impose ongoing requirements for potentially costly post-approval studies. In addition, regulatory agencies subject a product, its manufacturer and the manufacturer's facilities to continual review and periodic inspections. If a regulatory agency discovers previously unknown problems with a product or a product class, including adverse events of unanticipated severity or frequency, or problems with the facility where the product is manufactured, a regulatory agency may impose restrictions on that product or product class, our collaborators and licensees or us, including requiring withdrawal of a product from the market. Our product candidates will also be subject to ongoing FDA and other foreign regulatory agency requirements for the labeling, packaging, storage, advertising, promotion, record-keeping and submission of safety and other post-market information on the product. If we or our collaborators and licensees fail to maintain regulatory compliance after receiving marketing approval, we or our collaborators and licensees may be unable to market our products and our business could suffer.

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Adverse events or the perception of adverse events in the field of gene therapy, or with respect to our product candidates, may negatively impact regulatory approval or public perception of our products.

The commercial success of some of our product candidates will depend in part on public acceptance of the use of gene therapy for preventing or treating human diseases. Serious adverse events, including patient deaths, have occurred in clinical trials utilizing viral delivery systems to deliver therapeutic genes to the patient's targeted cells. Although none of our current products or studies utilize viral delivery systems, these adverse events, as well as any other adverse events in the field of gene therapy that may occur in the future, may negatively influence public perception of gene therapy in general. If public perception is influenced by claims that gene therapy is unsafe, our product candidates may not be accepted by the general public or the medical community.

Future adverse events in gene therapy or the biotechnology industry could also result in greater governmental regulation, stricter labeling requirements and potential regulatory delays in the testing or approval of our potential products. Any increased scrutiny could delay or increase the costs of our product development efforts or clinical trials. In addition, any adverse events that may occur in our clinical trials and any resulting publicity may cause regulatory delays or otherwise affect our product development efforts or clinical trials.

Some of our potential products may be administered to patients who are suffering from, or are vulnerable to, serious diseases or other conditions which can themselves be life-threatening and often result in the death of the patient. For example, one patient in our Allovectin® Phase 2 trial conducted in 2000, died from progressive disease more than two months after receiving Allovectin® and other cancer therapies. The death was originally reported as unrelated to the treatment. Following an autopsy, the death was reclassified as probably related to the treatment because the possibility could not be ruled out. We do not believe Allovectin® was a significant factor in the patient's death. Patient deaths in our clinical trials, even if caused by pre-existing diseases or conditions, could negatively affect the perception of our product candidates. In addition, in our TransVax Phase 2 trial, we administered TransVax to patients who were at risk of CMV reactivation. Although we do not believe our vaccine candidates could cause the diseases they are designed to protect against, a temporal relationship between vaccination and disease onset could be perceived as causal. Some of our products are designed to stimulate immune responses, and those responses, if particularly strong or uncontrolled, could result in local or systemic adverse events, including latent adverse events.

Our patents and proprietary rights may not provide us with any benefit and the patents of others may prevent us from commercializing our products.

As of December 31, 2010, we were the assignee or co-assignee of 66 issued U.S. and foreign patents. We maintain our issued patents by paying maintenance fees to the patent office in each country when due. Where appropriate, we participate in legal proceedings to vigorously defend against the revocation or withdrawal of our patents. The scope and nature of these proceedings generally differ depending on the country in which they are initiated. If we are not successful in defending our patents, we may lose all or part of our proprietary rights related to those patents in these geographic regions.

As of December 31, 2010, we were also prosecuting 76 pending patent applications in the United States and in foreign countries that cover various aspects of our proprietary technologies, not including patent applications for which we are a co-assignee and that are being prosecuted by our partners.

We may not receive any patents from our current patent applications. Issued patents provide exclusivity for only a limited time period, after which they no longer serve to protect proprietary technologies or to provide any commercial advantage. Moreover, if patents are issued to us, governmental authorities may not allow claims sufficient to protect our technologies and products. Finally, others may challenge or seek to circumvent or invalidate our patents. In that event, the rights granted under our patents may be inadequate to protect our proprietary technologies or to provide any commercial advantage.

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Some components of our gene-based product candidates are, or may become, patented by others. As a result, we may be required to obtain licenses to conduct research, to manufacture, or to market such products. Licenses may not be available on commercially reasonable terms, or at all, which may impede our ability to commercialize our products.

In March 2004, the NIH and the FDA launched the jointly developed Genetic Modification Clinical Research Information System, or GeMCRIS, an Internet-based database of human gene transfer trials. GeMCRIS enables individuals to easily view information on particular characteristics of clinical gene transfer trials. Although GeMCRIS includes special security features designed to protect patient privacy and confidential commercial information, these security features may be inadequately designed or enforced, potentially resulting in disclosure of confidential commercial information. In addition, the NIH, in collaboration with the FDA, has developed an Internet site, ClinicalTrials.gov, which provides public access to information on clinical trials and their results for a wide range of diseases and conditions. Future disclosures of such confidential commercial information may result in loss of advantage of competitive secrets.

The legal proceedings to obtain and defend patents, and litigation of third-party claims of intellectual property infringement, could require us to spend money and could impair our operations.

Our success will depend in part on our ability to obtain patent protection for our products and processes, both in the United States and in other countries. The patent positions of biotechnology and pharmaceutical companies, however, can be highly uncertain and involve complex legal and factual questions. Therefore, it is difficult to predict the breadth of claims allowed in the biotechnology and pharmaceutical fields.

We also rely on confidentiality agreements with our corporate collaborators, employees, consultants and certain contractors to protect our proprietary technologies. However, these agreements may be breached and we may not have adequate remedies for such breaches. In addition, our trade secrets may otherwise become known or independently discovered by our competitors.

Protecting intellectual property rights can be very expensive. Litigation may be necessary to enforce patents issued to us or to determine the scope and validity of third-party proprietary rights. Moreover, if a competitor were to file a patent application claiming technology also invented by us, we would have to participate in an interference proceeding before the U.S. Patent and Trademark Office to determine the priority of the invention. We may be drawn into interferences with third parties or may have to provoke interferences ourselves to unblock third-party patent rights to allow us or our licensees to commercialize products based on our technologies. Litigation could result in substantial costs and the diversion of management's efforts regardless of the results of the litigation. An unfavorable result in litigation could subject us to significant liabilities to third parties, require disputed rights to be licensed or require us to cease using some technologies.

Our products and processes may infringe, or be found to infringe, patents not owned or controlled by us. Patents held by others may require us to alter our products or processes, obtain licenses, or stop activities. If relevant claims of third-party patents are upheld as valid and enforceable, we could be prevented from practicing the subject matter claimed in the patents, or may be required to obtain licenses or redesign our products or processes to avoid infringement. In addition, we could be required to pay money damages. A number of genetic sequences or proteins encoded by genetic sequences that we are investigating are, or may become, patented by others. As a result, we may have to obtain licenses to test, use or market these products. Our business will suffer if we are not able to obtain licenses at all or on terms commercially reasonable to us and we are not able to redesign our products or processes to avoid infringement.

We have incurred costs in several legal proceedings involving our intellectual property rights in Europe, Japan and Canada. We may continue to incur costs to defend and prosecute patents and patent applications in these and other regions.

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Competition and technological change may make our product candidates and technologies less attractive or obsolete.

We compete with companies, including major pharmaceutical and biotechnology firms, that are pursuing other forms of treatment or prevention for diseases that we target. We also may experience competition from companies that have acquired or may acquire technologies from universities and other research institutions. As these companies develop their technologies, they may develop proprietary positions which may prevent us from successfully commercializing products.

Some of our competitors are established companies with greater financial and other resources than we have. Other companies may succeed in developing products and obtaining regulatory approval from the FDA or comparable foreign agencies faster than we do, or in developing products that are more effective than ours. Research and development by others may seek to render our technologies or products obsolete or noncompetitive or result in treatments or cures superior to any therapeutics developed by us.

If we lose our key personnel or are unable to attract and retain additional personnel, we may not be able to achieve our business objectives.

We are highly dependent on our principal scientific, manufacturing, clinical, regulatory and management personnel, including Vijay B. Samant, our President and Chief Executive Officer. The loss of the services of these individuals might significantly delay or prevent the achievement of our objectives. We do not maintain key person life insurance on any of our personnel. We depend on our continued ability to attract, retain and motivate highly qualified management and scientific personnel. We face competition for qualified individuals from other companies, academic institutions, government entities and other organizations in attracting and retaining personnel. To pursue our product development plans, we may need to hire additional management personnel and additional scientific personnel to perform research and development, as well as additional personnel with expertise in clinical trials, government regulation and manufacturing. However, due to the reasons noted above, we may not be successful in hiring or retaining qualified personnel and therefore we may not be able to achieve our business objectives.

We have limited experience in manufacturing our product candidates in commercial quantities. We may not be able to comply with applicable manufacturing regulations or produce sufficient product for contract or commercial purposes.

The commercial manufacturing of vaccines and other biological products is a time-consuming and complex process, which must be performed in compliance with the FDA's current Good Manufacturing Practices, or cGMP, regulations. We may not be able to comply with the cGMP regulations, and our manufacturing process may be subject to delays, disruptions or quality control problems. In addition, we may need to complete the installation and validation of additional large-scale fermentation and related purification equipment to produce the quantities of product expected to be required for commercial purposes. We have limited experience in manufacturing at this scale. Noncompliance with the cGMP regulations, the inability to complete the installation or validation of additional large-scale equipment, or other problems with our manufacturing process may limit or delay the development or commercialization of our product candidates, and cause us to breach our contract manufacturing service arrangements.

We currently depend on third parties to conduct our clinical trials and may initially depend on third parties to manufacture our product candidates commercially.

We currently rely on third parties, including clinical research organizations, to perform critical services for us in connection with our clinical trials. Clinical research organizations are responsible for many aspects of the trials, including finding and enrolling subjects for testing and administering the trials. Although we rely on these third parties to conduct our clinical trials, we are responsible for ensuring that each of our clinical trials is conducted in accordance with its protocol and applicable regulations, including good clinical practices. Our

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reliance on third parties does not relieve us of these responsibilities and requirements. These third parties may not comply with all regulatory and contractual requirements or may not otherwise perform their services in a timely or acceptable manner, and we may need to enter into new arrangements with alternative third parties and our clinical trials may be extended, delayed or terminated. In addition, if such third parties fail to perform their obligations in compliance with our clinical trial protocols or applicable regulations, our clinical trials may not meet regulatory requirements or may need to be repeated. These risks also apply to the development activities of our collaborators and licensees, and we do not control our collaborators' and licensees' research and development, clinical trials or regulatory activities.

We may also initially depend on collaborators, licensees or other third parties to manufacture our product candidates in commercial quantities. There are a limited number of third parties that could manufacture our product candidates. We may be unable to enter into any arrangement for the commercial manufacture of our product candidates, and any arrangement we secure may not meet our requirements for manufacturing quality or quantity. Our dependence on third parties for the commercial manufacture of our product candidates may also reduce our profit margins and our ability to develop and deliver products in a timely manner.

We have no marketing or sales experience, and if we are unable to develop our own sales and marketing capability, we may not be successful in commercializing our products.

Our current strategy is to market our proprietary products directly in the United States, but we currently do not possess pharmaceutical marketing or sales capabilities. To market and sell our proprietary products, we will need to develop a sales force and a marketing group with relevant pharmaceutical industry experience, or make appropriate arrangements with strategic partners to market and sell these products. Developing a marketing and sales force is expensive and time-consuming and could delay any product launch. If we are unable to successfully employ qualified marketing and sales personnel or develop other sales and marketing capabilities, we may not be able to generate sufficient product revenue to become profitable.

Healthcare reform and restrictions on reimbursement may limit our returns on potential products.

Our ability to earn sufficient returns on our products will depend in part on how much, if any, reimbursement for our products and related treatments will be available from:

Government health administration authorities;

Government agencies procuring biodefense products for military or public use, including some for which we may become a sole-source vendor;

Private health coverage insurers;

Managed care organizations; and

Other organizations.

If we fail to obtain appropriate reimbursement, we could be prevented from successfully commercializing our potential products. There are ongoing efforts by governmental and third-party payers to contain or reduce the costs of healthcare through various reform measures. In the United States, the Federal government passed comprehensive healthcare reform legislation in 2010. Many of the details regarding the implementation of this legislation are yet to be determined and we currently cannot predict whether or to what extent such implementation or adoption of reforms may impair our business.

Additionally, third-party payers are increasingly challenging the price of medical products and services. If purchasers or users of our products are not able to obtain adequate reimbursement for the cost of using our products, they may forego or reduce their use. Significant uncertainty exists as to the reimbursement status of newly approved healthcare products, and whether adequate third-party coverage will be available.

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We use hazardous materials in our business. Any claims relating to improper handling, storage or disposal of these materials could be time consuming and costly.

Our research and development processes involve the controlled storage, use and disposal of hazardous materials and biological materials. Our hazardous materials include certain compressed gases, flammable liquids, acids and bases, and other toxic compounds. We are subject to federal, state and local regulations governing the use, manufacture, storage, handling and disposal of materials and waste products. Although we believe that our safety procedures for handling and disposing of these hazardous materials comply with the standards prescribed by law and regulation, the risk of accidental contamination or injury from hazardous materials cannot be completely eliminated. In the event of an accident, we could be held liable for any damages that result. We have insurance that covers our use of hazardous materials with the following coverage limits: up to \$250,000 per occurrence for losses related to the release of bio-contaminants, \$250,000 per occurrence for losses from refrigerant contamination and \$250,000 per occurrence for losses from radioactive contamination. Any liability could exceed the limits or fall outside the coverage of our insurance. We could incur significant costs to comply with current or future environmental laws and regulations.

We may have significant product liability exposure.

We face an inherent business risk of exposure to product liability and other claims in the event that our technologies or products are alleged to have caused harm. We also have potential liability for products manufactured by us on a contract basis for third parties. Although we currently maintain product liability insurance in the amount of \$10 million in the aggregate plus additional coverage specific to the foreign countries where our clinical trials are being conducted, this insurance coverage may not be sufficient, and we may not be able to obtain sufficient coverage in the future at a reasonable cost. Our inability to obtain product liability insurance at an acceptable cost or to otherwise protect against potential product liability claims could prevent or inhibit the commercialization of any products developed by us or our collaborators, or our ability to manufacture products for third parties. If we are sued for any injury caused by our technologies or products, or by third-party products that we manufacture, our liability could exceed our insurance coverage and total assets.

Negative conditions in the global credit markets may impair the liquidity of a portion of our investment portfolio.

Our investment securities consist of high-grade auction rate securities, corporate debt securities and government agency securities. As of December 31, 2010, our long-term investments included (at par value) \$6.5 million auction rate securities secured by municipal bonds and student loans. At December 31, 2010, the auction rate securities we held had Standard and Poor's credit ratings of BBB or AAA. Our auction rate securities are debt instruments with a long-term maturity and with an interest rate that is reset in short intervals through auctions. Ongoing conditions in the global credit markets have prevented some investors from liquidating their holdings of auction rate securities because the amount of securities submitted for sale has exceeded the amount of purchase orders for such securities. If there is insufficient demand for the securities at the time of an auction, the auction may not be completed and the interest rates may be reset to predetermined rates. When auctions for these securities fail, the investments may not be readily convertible to cash until a future auction of these investments is successful or they are redeemed or mature.

Since February 2008, there has been insufficient demand at auction for all of our auction rate securities held at December 31, 2010. As a result, these affected securities are currently not liquid, and we could be required to hold them until they are redeemed by the issuer or to maturity. As of December 31, 2010, we had recognized \$1.5 million of losses related to those auction rate securities by adjusting their carrying value. The market value of these securities has partially recovered from the lows that created the loss. Any future decline in market value may result in additional losses being recognized.

In the event we need to access the funds that are in an illiquid state, we will not be able to do so without the possible loss of principal, until a future auction for these investments is successful or they are redeemed by the issuer or they mature. If we are unable to sell these securities in the market or they are not redeemed, then we may be required to hold them to maturity.

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Our stock price could continue to be highly volatile and you may not be able to resell your shares at or above the price you pay for them.

The market price of our common stock, like that of many other life sciences companies, has been and is likely to continue to be highly volatile. From January 1, 2007, to December 31, 2010, our stock price has ranged from \$1.04 to \$6.99. The following factors, among others, could have a significant impact on the market price of our common stock:

The results of our preclinical studies and clinical trials or announcements regarding our plans for future studies or trials, or those of our collaborators, licensees or competitors;

Evidence or lack of evidence of the safety or efficacy of our potential products or those of our collaborators, licensees or competitors;

The announcement by us or our collaborators, licensees or competitors of technological innovations or new products;

Developments concerning our patent or other proprietary rights or those of our collaborators, licensees or competitors, including litigation and challenges to our proprietary rights;

Other developments with our collaborators or licensees, including our entry into new collaborative or licensing arrangements;

Geopolitical developments, natural or man-made disease threats, or other events beyond our control;

U.S. and foreign governmental regulatory actions;

Changes or announcements in reimbursement policies;

Period-to-period fluctuations in our operating results;

Market conditions for life science stocks in general;

Changes in the collective short interest in our stock;

Changes in estimates of our performance by securities analysts; and

Our cash balances, need for additional capital, and access to capital.

We are at risk of securities class action litigation due to our expected stock price volatility.

In the past, stockholders have brought securities class action litigation against a company following a decline in the market price of its securities. This risk is especially acute for us because life science companies have experienced greater than average stock price volatility in recent years

and, as a result, have been subject to, on average, a greater number of securities class action claims than companies in other industries. To date, we have not been subject to class action litigation. However, we may in the future be the target of this litigation. Securities litigation could result in substantial costs and divert our management's attention and resources, and could seriously harm our business.

Anti-takeover provisions in our charter documents and under Delaware law could make an acquisition of us, which may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management.

Our certificate of incorporation and bylaws include anti-takeover provisions, such as a classified board of directors, a prohibition on stockholder actions by written consent, the authority of our board of directors to issue preferred stock without stockholder approval, and supermajority voting requirements for specified actions. In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which generally prohibits stockholders owning in excess of 15% of our outstanding voting stock from merging or combining with us for a period of three years. These provisions may

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delay or prevent an acquisition of us, even if the acquisition may be considered beneficial by some stockholders. In addition, they may discourage or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors, which is responsible for appointing the members of our management.

The issuance of preferred stock could adversely affect our common stockholders.

We have on file two effective shelf registration statements that collectively allow us to raise up to an additional \$105.6 million from the sale of common stock, preferred stock, debt securities and/or warrants and our restated certificate of incorporation authorizes us to issue up to 5,000,000 shares of preferred stock. The issuance of preferred stock could adversely affect the voting power of holders of our common stock, and reduce the likelihood that our common stockholders will receive dividend payments and payments upon liquidation. The issuance of preferred stock could also decrease the market price of our common stock, or have terms and conditions that could discourage a takeover or other transaction that might involve a premium price for our shares or that our stockholders might believe to be in their best interests.

ITEM 1B. UNRESOLVED STAFF COMMENTS

Not applicable.

ITEM 2. PROPERTIES

We lease approximately 68,400 square feet of manufacturing, research laboratory and office space at a single site in San Diego, California, under a lease agreement that expires in August 2017.

ITEM 3. LEGAL PROCEEDINGS

European patent 1026253, covering a significant portion of our core DNA delivery technology, was granted in September 2004. In September 2005, the 253 patent was opposed by eight parties. This 253 patent was revoked on formal grounds in December 2008 under an initial ruling by the Opposition Division of the European Patent Office. We appealed this decision and in December 2010 our appeal was successful and the 253 patent was reinstated by the Appeals Board and sent back to the Opposition Division for further processing. While the 253 patent expired in March 2010 the reinstatement gives us the ability to prosecute any infringing activity that may have occurred prior to the 253 patent expiring and within five years of initiation of the legal proceedings. We may use other issued patents and patent applications that are pending in Europe to protect our DNA technology.

We prosecute our intellectual property estate vigorously to obtain the broadest valid scope for our patents. Due to uncertainty of the ultimate outcome of these matters, the impact on future operating results or our financial condition is not subject to reasonable estimates.

In the ordinary course of business, we may become a party to lawsuits involving various matters. We are unaware of any such lawsuits presently pending against us which, individually or in the aggregate, are deemed to be material to our financial condition or results of operations.

ITEM 4. RESERVED

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 is listed on the Nasdaq Global Market under the symbol VICL. The following table presents quarterly information on the range of high and low sales prices for our common stock during the periods presented.

	High	Low
2010		
First Quarter	\$ 4.12	\$ 2.78
Second Quarter	3.86	2.98
Third Quarter	4.05	2.20
Fourth Quarter	2.35	1.74
2009		
First Quarter	\$ 2.30	\$ 1.20
Second Quarter	3.30	1.75
Third Quarter	5.51	2.37
Fourth Quarter	4.43	2.66

As of February 15, 2011, there were approximately 309 stockholders of record of our common stock and 71,695,518 shares of our common stock outstanding. We have never declared or paid any dividends and do not expect to pay any dividends in the foreseeable future. We did not repurchase any of our common stock in the fourth quarter of 2010.

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Performance Graph

The following performance graph and related information shall not be deemed soliciting material or to be filed with the SEC, nor shall such information be incorporated by reference into any future filing under the Securities Act or Exchange Act, except to the extent that we specifically incorporate it by reference into such filing.

The following table compares total stockholder returns for Vical over the last five years to the Nasdaq US and Foreign Index and the Nasdaq Pharmaceutical Stocks Index assuming a \$100 investment made on December 30, 2005. Each of the two comparative measures of cumulative total return assumes reinvestment of dividends. The stock performance shown on the graph below is not necessarily indicative of future price performance.

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The following table summarizes certain selected financial data derived from our audited financial statements. The information presented should be read in conjunction with Management's Discussion and Analysis of Financial Condition and Results of Operations and our audited financial statements and notes thereto appearing elsewhere in this Annual Report on Form 10-K.

	2010	Years ended December 31,			2006
		2009	2008	2007	
	(in thousands, except per share amounts)				
Statement of Operations Data:					
Revenues:					
Contract and grant revenue	\$ 6,249	\$ 3,692	\$ 2,146	\$ 4,574	\$ 14,213
License and royalty revenue	2,462	8,994	5,810	938	527
Total revenues	8,711	12,686	7,956	5,512	14,740
Operating expenses:					
Research and development	19,692	23,449	25,532	22,934	18,514
Manufacturing and production	11,436	10,354	11,046	13,762	13,588
General and administrative	8,798	7,469	8,721	9,078	9,055
Total operating expenses	39,926	41,272	45,299	45,774	41,157
Loss from operations	(31,215)	(28,586)	(37,343)	(40,262)	(26,417)
Investment income, net	830	30	468	4,464	3,541
Interest expense		(2)	(21)	(96)	(272)
Net loss	\$ (30,385)	\$ (28,558)	\$ (36,896)	\$ (35,894)	\$ (23,148)
Net loss per share (basic and diluted)	\$ (0.51)	\$ (0.61)	\$ (0.93)	\$ (0.92)	\$ (0.74)
Weighted average shares used in per share calculation	60,084	47,086	39,856	39,190	31,434
Balance Sheet Data (at end of period):					
Cash, cash equivalents, marketable securities, long-term investments, including restricted	\$ 60,702	\$ 52,562	\$ 41,676	\$ 71,489	\$ 100,393
Working capital	49,874	38,424	30,144	64,642	97,289
Total assets	72,907	67,372	59,057	90,585	125,249
Long-term obligations, less current portion	2,211	2,380	2,469	2,565	2,973
Total stockholders' equity	64,362	54,982	48,614	79,912	114,123

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ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Overview

We research and develop biopharmaceutical products based on our patented DNA delivery technologies for the prevention and treatment of serious or life-threatening diseases. We believe the following areas of research offer the greatest potential for near-term commercialization for us and our partners:

Vaccines for use in high-risk populations for infectious disease targets for which there are significant needs;

Vaccines for general pediatric, adolescent and adult populations for infectious disease applications;

Cancer vaccines or immunotherapies which complement our existing programs and core expertise; and

Gene-based delivery of therapeutic proteins, such as angiogenic growth factors, for treatment of cardiovascular diseases. We currently have five active independent clinical and preclinical development programs in the areas of infectious disease and cancer including:

A fully enrolled Phase 3 clinical trial using our Allovectin[®] immunotherapeutic in patients with metastatic melanoma which has been funded, up to certain limits, by AnGes MG, Inc., or AnGes, through cash payments and equity investments under a research and development agreement;

A recently completed Phase 2 clinical trial using TransVax[®], our cytomegalovirus, or CMV, therapeutic DNA vaccine, in patients undergoing hematopoietic cell transplants. Preparation for a Phase 3 trial is ongoing;

An ongoing Phase 1 clinical trial using our H1N1 pandemic influenza DNA vaccine formulated with our proprietary Vaxfectin[®] adjuvant;

A completed preclinical program using our CyMVectin[®] prophylactic vaccine formulated with our proprietary Vaxfectin[®] adjuvant to prevent CMV infection before and during pregnancy; and

A preclinical program with therapeutic and prophylactic vaccines for herpes simplex virus 2 formulated with our proprietary Vaxfectin[®] adjuvant.

We have leveraged our patented technologies through licensing and collaboration arrangements, such as our licensing arrangements with Merck & Co., Inc., or Merck, the sanofi-aventis Group, or sanofi-aventis, AnGes, Aqua Health Ltd. of Canada, or Aqua Health, an affiliate of Novartis Animal Health, and Merial Limited, or Merial, a subsidiary of sanofi-aventis, among other biopharmaceutical companies. Two of the licenses have resulted in the following approvals in veterinary applications, which we believe are important steps in the validation of our DNA delivery technology:

In 2005, our licensee Aqua Health received approval from the Canadian Food Inspection Agency to sell a DNA vaccine, Apex[®]-IHN, to protect farm-raised salmon against a lethal infectious disease.

In 2009, our licensee Merial received approval from the U.S. Department of Agriculture, or USDA, to market a therapeutic DNA vaccine, ONCEPT[®], designed to aid in extending the survival time of dogs with oral melanoma, which was launched in January 2010.

We believe that Merial's vaccine is the first cancer vaccine ever approved for therapeutic use.

Furthermore, our partner AnGes has applied our technologies to the local delivery of a gene that encodes an angiogenic growth factor that promotes the growth of blood vessels. AnGes has reported that it is currently preparing for a global Phase 3 clinical trial for its Collatogene angiogenesis product in patients with critical limb ischemia, or CLI, an advanced form of peripheral arterial disease, or PAD, and in the meantime has recently withdrawn its New Drug Application, or NDA, previously submitted to the Japanese Ministry of Health, Labor

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and Welfare. AnGes previously announced that it had reached agreement with the FDA regarding a Special Protocol Assessment for the Phase 3 clinical trial of Collatogene and that the FDA has granted Fast Track designation to Collatogene as a treatment for CLI.

In addition, we have licensed complementary technologies from leading research institutions and biopharmaceutical companies. We also have granted non-exclusive, academic licenses to our DNA delivery technology patent estate to 11 leading research institutions including Stanford, Harvard, Yale and the Massachusetts Institute of Technology. The non-exclusive academic licenses allow university researchers to use our technology free of charge for educational and internal, non-commercial research purposes. In exchange, we have the option to exclusively license from the universities potential commercial applications arising from their use of our technology on terms to be negotiated.

Research, Development and Manufacturing Programs

To date, we have not received revenues from the sale of our independently developed pharmaceutical products and have received minimal amounts of revenue from the sale of commercially marketed products by our licensees. We earn revenue by performing services under research and development contracts, grants, manufacturing contracts, and from licensing access to our proprietary technologies. Since our inception, we estimate that we have received approximately \$168.2 million in revenue from these sources. Revenues by source for each of the three years ended December 31, 2010, were as follows (in millions):

Source	2010	2009	2008
Navy contracts	\$ 1.5	\$ 2.0	\$
IPPOX contract	2.4		
Manufacturing process development grant	1.5	1.0	1.5
HSV grants	0.7	0.6	0.4
Other contracts and grants	0.1	0.1	0.2
Total contract and grant revenues	6.2	3.7	2.1
Merck license		1.5	1.0
AnGes license	2.0	6.7	4.0
Life Technologies royalties	0.3	0.4	0.7
Other royalties and licenses	0.2	0.4	0.1
Total royalty and license revenues	2.5	9.0	5.8
Total revenues	\$ 8.7	\$ 12.7	\$ 7.9

Research, development, manufacturing and production costs by major program, as well as other expenses for each of the three years ended December 31, 2010, were as follows (in millions):

Program	2010	2009	2008
Allovectin®	\$ 16.5	\$ 21.0	\$ 18.0
Pandemic influenza	2.1	1.6	4.5
CMV	6.7	5.0	6.0
Other research, development, manufacturing and production	5.8	6.2	8.1
Total research, development, manufacturing and production	\$ 31.1	\$ 33.8	\$ 36.6

From inception through December 31, 2010, we estimate that we have spent approximately \$414 million on research, development, manufacturing and production. Our current independent development focus is on our cancer immunotherapeutic Allovectin®, novel DNA vaccines for CMV and pandemic influenza, and other clinical and preclinical targets.

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We are conducting a Phase 3 clinical trial using Allovectin® in patients with recurrent metastatic melanoma which has been funded, up to certain limits, by AnGes through cash payments and equity investments under a research and development agreement. We are also in the early stages of clinical development of vaccine candidates for CMV and pandemic influenza and these programs will require significant additional costs to advance through development to commercialization. From inception through December 31, 2010, we have spent approximately \$133 million on our Allovectin® program, \$57 million on our CMV programs, and \$25 million on our pandemic influenza programs.

We have other product candidates in the research stage. It can take many years to develop product candidates from the initial decision to screen product candidates, perform preclinical and safety studies, and perform clinical trials leading up to possible approval of a product by the FDA or comparable foreign agencies. The outcome of the research is unknown until each stage of the testing is completed, up through and including the registration clinical trials. Accordingly, we are unable to predict which potential product candidates we may proceed with, the time and cost to complete development, and ultimately whether we will have a product approved by the FDA or comparable foreign agencies.

As a result, we expect to incur substantial operating losses for at least the next several years, due primarily to the advancement of our research and development programs, the cost of preclinical studies and clinical trials, spending for outside services, costs related to maintaining our intellectual property portfolio, costs due to manufacturing activities, costs related to our facilities, and possible advancement toward commercialization activities.

Critical Accounting Policies and Estimates

The preparation of financial statements in accordance with accounting principles generally accepted in the United States requires that management make a number of assumptions and estimates that affect the reported amounts of assets, liabilities, revenues and expenses in our financial statements and accompanying notes. Management bases its estimates on historical information and assumptions believed to be reasonable. Although these estimates are based on management's best knowledge of current events and circumstances that may impact us in the future, actual results may differ from these estimates.

Our critical accounting policies are those that affect our financial statements materially and involve a significant level of judgment by management. Our critical accounting policies regarding revenue recognition are in the following areas: license and royalty agreements, manufacturing contracts, and grant revenues. Our critical accounting policies also include recognition of research and development expenses and the valuation of long-lived and intangible assets.

Revenue Recognition

Revenue is recognized when the four basic criteria of revenue recognition are met: (1) persuasive evidence of an arrangement exists; (2) delivery has occurred or services rendered; (3) the fee is fixed or determinable; and (4) collectability is reasonably assured.

Contract Manufacturing Revenue. Our contract manufacturing arrangements typically require the delivery of multiple lots of clinical vaccines. We analyze our multiple element arrangements to determine whether the elements can be separated and accounted for individually as separate units of accounting. The evaluation is performed at the inception of the arrangement. The delivered item(s) is considered a separate unit of accounting if all of the following criteria are met: (1) the delivered item(s) have standalone value to the customer; (2) there is objective and reliable evidence of the fair value of the undelivered item(s); and (3) if the arrangement includes a general right of return relative to the delivered item, delivery or performance of the undelivered item(s) is considered probable and substantially in our control. If the delivered item does not have standalone value or we do not have objective or reliable evidence of the fair value of the undelivered component, the amount of revenue allocable to the delivered item is deferred.

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License and Royalty Revenue. Our license and royalty revenues are generated through agreements with strategic partners. Nonrefundable, up-front license fees and milestone payments with standalone value that are not dependent on any future performance by us under the arrangements are recognized as revenue upon the earlier of when payments are received or collection is assured, but are deferred if we have continuing performance obligations. If we have continuing involvement through contractual obligations under such agreement, such up-front fees are deferred and recognized over the period for which we continue to have a performance obligation, unless all of the following criteria exist: (1) the delivered item(s) have standalone value to the customer; (2) there is objective and reliable evidence of the fair value of the undelivered item(s); and (3) if the arrangement includes a general right of return relative to the delivered item, delivery or performance of the undelivered item(s) is considered probable and substantially in our control. If the delivered item does not have standalone value or we do not have objective or reliable evidence of the fair value of the undelivered component, the amount of revenue allocable to the delivered item is deferred.

We recognize royalty revenues from licensed products when earned in accordance with the terms of the license agreements. Net sales figures used for calculating royalties include deductions for costs of returns, cash discounts, and costs of freight and warehousing, which may vary over the course of the license agreement. Payments received related to milestones are recognized as revenue upon the achievement of the milestones as specified in the underlying agreements, which represent the culmination of the earnings process.

Government Research Grant Revenue. We recognize revenues from federal government research grants during the period in which the related expenditures are incurred.

Research and Development Expenses

Research and development expenses consist of expenses incurred in performing research and development activities including salaries and benefits, facilities and other overhead expenses, clinical trials, contract services and other outside expenses. Research and development expenses are charged to operations as they are incurred.

We assess our obligations to make milestone payments that may become due for licensed or acquired technology to determine whether the payments should be expensed or capitalized. We charge milestone payments to research and development expense when:

The technology is in the early stage of development and has no alternative uses;

There is substantial uncertainty of the technology or product being successful;

There will be difficulty in completing the remaining development; and

There is substantial cost to complete the work.

Capitalization and Valuation of Long-Lived and Intangible Assets

Intangible assets with finite useful lives consist of capitalized legal costs incurred in connection with patents, patent applications pending and technology license agreements. Payments to acquire a license to use a proprietary technology are capitalized if the technology is expected to have alternative future use in multiple research and development projects. We amortize costs of approved patents, patent applications pending and license agreements over their estimated useful lives, or terms of the agreements, whichever are shorter.

For patents pending, we amortize the costs over the shorter of a period of twenty years from the date of filing the application or, if licensed, the term of the license agreement. We re-assess the useful lives of patents when they are issued, or whenever events or changes in circumstances indicate the useful lives may have changed. For patents and patent applications pending that we abandon, we charge the remaining unamortized accumulated costs to expense.

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Intangible assets and long-lived assets are evaluated for impairment at least annually or whenever events or changes in circumstances indicate that their carrying value may not be recoverable. If the review indicates that intangible assets or long-lived assets are not recoverable, their carrying amount would be reduced to fair value. Factors we consider important that could trigger an impairment review include the following:

A significant change in the manner of our use of the acquired asset or the strategy for our overall business; and/or

A significant negative industry or economic trend.

In the event we determine that the carrying value of intangible assets or long-lived assets is not recoverable based upon the existence of one or more of the above indicators of impairment, we may be required to record impairment charges for these assets. As of December 31, 2010, our largest group of intangible assets with finite lives includes patents and patents pending for our DNA delivery technology, consisting of intangible assets with a net carrying value of approximately \$2.8 million.

Recent Accounting Pronouncements

For information on the recent accounting pronouncements which may impact our business, see Note 1 of the Notes to Financial Statements included in this Annual Report on Form 10-K.

Results of Operations

Year Ended December 31, 2010, Compared to Year Ended December 31, 2009

Total Revenues. Total revenues decreased \$4.0 million, or 31.3%, to \$8.7 million in 2010 from \$12.7 million in 2009. Our license and royalty revenue decreased by \$6.5 million which was primarily the result of a \$4.7 million decrease in the recognition of revenue related to our Allovectin[®] license agreement with AnGes and a \$1.5 million milestone payment received from Merck during the year ended December 31, 2009, related to its Phase 1 clinical-stage development of an investigational plasmid DNA cancer vaccine. Our contract and grant revenue increased by \$2.6 million which was primarily the result of the recognition of revenue related to the delivery of a HIV vaccine to the IPPOX Foundation and the delivery of an H1N1 vaccine to the U.S. Navy.

Research and Development Expenses. Research and development expenses decreased \$3.8 million, or 16.0%, to \$19.7 million for 2010 from \$23.5 million for 2009. This decrease was primarily the result of lower Allovectin[®] clinical trial related costs.

Manufacturing and Production Expenses. Manufacturing and production expenses increased \$1.1 million, or 10.5%, to \$11.4 million for 2010 from \$10.3 million for 2009. This increase was primarily the result of the recognition of costs related to the delivery of a H1N1 influenza vaccine in 2010 that we manufactured for the U.S. Navy.

General and Administrative Expenses. General and administrative expenses increased \$1.3 million, or 17.8%, to \$8.8 million for 2010 from \$7.5 million for 2009. This increase was primarily the result of higher stock based compensation expense during the year ended December 31, 2010, when compared to the prior year period.

Investment Income. Investment and other income increased \$0.8 million, or 2,667%, to \$0.8 million for 2010 from \$30,000 for 2009. This increase was primarily the result of our receipt of \$0.5 million in income related to the Qualifying Therapeutic Discovery Project tax credit during the year ended December 31, 2010.

Year Ended December 31, 2009, Compared to Year Ended December 31, 2008

Total Revenues. Total revenues increased \$4.7 million, or 59.5%, to \$12.7 million in 2009 from \$8.0 million in 2008. Our license and royalty revenue increased by \$3.2 million, which was primarily the result of an increase in license revenue recognized under our agreement with AnGes to fund our Allovectin[®] Phase 3 clinical trial. Our contract and grant revenue increased by \$1.5 million, which was primarily the result of the recognition of revenue related to the delivery of a dengue vaccine to the NMRC.

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Research and Development Expenses. Research and development expenses decreased \$2.1 million, or 8.2%, to \$23.4 million for 2009 from \$25.5 million for 2008. This decrease was primarily the result of lower personnel costs attributed to our November 2008 work force reduction, which was partially offset by increased costs associated with our Allovectin® Phase 3 clinical trial.

Manufacturing and Production Expenses. Manufacturing and production expenses decreased \$0.7 million, or 6.3%, to \$10.4 million for 2009 from \$11.1 million for 2008. This decrease was primarily the result of lower personnel costs attributed to our November 2008 work force reduction which was offset by the capitalization of costs related to the production of an H1N1 vaccine manufactured for the U.S. Navy.

General and Administrative Expenses. General and administrative expenses decreased \$1.3 million, or 14.4%, to \$7.5 million for 2009 from \$8.7 million for 2008. This decrease was primarily the result of lower personnel costs attributed to our November 2008 work force reduction.

Investment Income. Investment and other income decreased \$0.4 million, or 93.6%, to \$30,000 for 2009, from \$0.5 million for 2008. This decrease was primarily the result of lower rates of return on our investments during the year ended December 31, 2009.

Interest Expense. Interest expense decreased \$19,000, or 90.5%, to \$2,000 for 2009 from \$21,000 for 2008. The decrease was primarily the result of lower principal amounts outstanding on our equipment financing obligations.

Liquidity and Capital Resources

Since our inception, we have financed our operations primarily through private placements of preferred and common stock, public offerings of common stock, and revenues from our operations. From our inception through December 31, 2010, we have received approximately \$168.2 million in revenues from performing services under research and development and manufacturing contracts, from grants and from licensing access to our proprietary technologies, and we have raised net proceeds of approximately \$370.8 million from the sale of equity securities. Cash, cash equivalents, marketable securities, and long-term investments, including restricted securities, totaled \$60.7 million at December 31, 2010, compared with \$52.6 million at December 31, 2009. The increase in our cash, cash equivalents and marketable securities for the year ended December 31, 2010, was the result of raising \$37.3 million from the sale of our securities which was offset by the use of cash to fund our operations.

Net cash used in operating activities was \$28.2 million and \$21.5 million for the years ended December 31, 2010 and 2009, respectively. The increase in net cash used in operating activities for the year ended December 31, 2010, compared with the prior year, was primarily the result of an increase in our net loss and a decrease in our accounts payable.

Net cash provided by (used in) investing activities was \$12.5 million and \$(9.3) million for the years ended December 31, 2010 and 2009, respectively. The increase in cash provided by investing activities for the year ended December 31, 2010, compared with the prior year, was primarily the result of an increase in net maturities of investments.

Net cash provided by financing activities was \$37.2 million and \$32.8 million for the years ended December 31, 2010 and 2009, respectively. The increase in cash provided by financing activities for the year ended December 31, 2010, compared with the prior year, was primarily the result of increased proceeds from the sale of our securities.

A discussion of our exposure to auction rate securities is included in Part 1, Item 3 of this Annual Report on Form 10-K under the heading Quantitative and Qualitative Disclosures About Market Risk.

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We expect to incur substantial additional research and development expenses, manufacturing and production expenses, and general and administrative expenses, including continued increases in costs related to personnel, preclinical and clinical testing, outside services, facilities, intellectual property and possible commercialization. Our future capital requirements will depend on many factors, including continued scientific progress in our research and development programs, the scope and results of preclinical testing and clinical trials, the time and costs involved in obtaining regulatory approvals, the costs involved in filing, prosecuting, enforcing and defending patent claims, the impact of competing technological and market developments, the cost of manufacturing scale-up and validation, and possible commercialization activities and arrangements. We may seek additional funding through research and development relationships with suitable potential corporate collaborators. We may also seek additional funding through public or private financings. We have on file two effective shelf registration statements that collectively allow us to raise up to an additional \$105.6 million from the sale of common stock, preferred stock, debt securities and/or warrants and we have also entered into an equity line of credit with Azimuth pursuant to which we may sell up to \$25.0 million of our common stock, subject to certain conditions. However, additional financing may not be available on favorable terms or at all. If additional funding is not available, we anticipate that our current available cash and existing sources of funding will be adequate to satisfy our cash needs at least through December 31, 2012.

Contractual Obligations and Off-Balance Sheet Arrangements

The following table sets forth our contractual obligations, including all off-balance sheet arrangements, as of December 31, 2010 (in thousands):

	Total	Payment Due by Period			
		Less than 1 Year	2-3 Years	4-5 Years	After 5 Years
Contractual Obligations¹					
Operating lease obligations	\$ 23,081	\$ 3,315	\$ 6,749	\$ 6,987	\$ 6,030
Unconditional purchase obligations ²	437	437			
Total contractual obligations	\$ 23,518	\$ 3,752	\$ 6,749	\$ 6,987	\$ 6,030

¹ Certain long-term liabilities reflected on our balance sheet are not presented in this table because they are already reflected in operating lease commitments, or do not require cash settlement in the future.

² Unconditional purchase obligations represent contractual commitments entered into for goods and services in the normal course of our business. The purchase obligations do not include potential severance payment obligations to our executive officers. For information regarding these severance arrangements, refer to the final paragraph in this Item 7.

Under our Merck, sanofi-aventis, AnGes, Merial and Aqua Health agreements, we are required to pay up to 10% of certain initial upfront monetary payments, and a small percentage of some royalty payments, to the Wisconsin Alumni Research Foundation and/or the University of Michigan. In addition, certain technology license agreements require us to make payments if we or our sublicensees advance products through clinical development. For programs developed with the support of U.S. government funding, the U.S. government may have rights to resulting products without payment of royalties to us.

We may be required to make future payments to our licensors based on the achievement of milestones set forth in various in-licensing agreements. In most cases, these milestone payments are based on the achievement of development or regulatory milestones, including the exercise of options to obtain licenses related to specific disease targets, commencement of various phases of clinical trials, filing of product license applications, approval of product licenses from the FDA or a foreign regulatory agency, and the first commercial sale of a related product. Payment for the achievement of milestones under our in-license agreements is highly speculative and subject to a number of contingencies.

The aggregate amount of additional milestone payments that we could be required to pay under all of our in-license agreements in place at December 31, 2010, is approximately \$17.7 million, of which approximately

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\$7.2 million is related to our independent programs and corporate and government collaborations which are currently in clinical development. These amounts assume that all remaining milestones associated with the milestone payments are met. In the event that product license approval for any of the related products is obtained, we may be required to make royalty payments in addition to these milestone payments. Although we believe that some of the milestones contained in our in-license agreements may be achieved, it is highly unlikely that a significant number of them will be achieved. Because the milestones are highly contingent and we have limited control over whether the development and regulatory milestones will be achieved, we are not in a position to reasonably estimate how much, if any, of the potential milestone payments will ultimately be paid, or when. Additionally, under the in-license agreements, many of the milestone events are related to progress in clinical trials which will take several years to achieve.

In addition, we have undertaken certain commitments under license agreements with collaborators, and under indemnification agreements with our officers and directors. Under the license agreements with our collaborators, we have agreed to continue to maintain and defend the patent rights licensed to the collaborators. Under the indemnification agreements with our officers and directors, we have agreed to indemnify those individuals for any expenses and liabilities in the event of a threatened, pending or actual investigation, lawsuit, or criminal or investigative proceeding.

We have employment agreements that contain severance arrangements with each of our three executive officers and three of our other executives. Under the agreements with the executive officers we are obligated to pay severance if we terminate the executive officer's employment without cause, or if the executive officer resigns for good reason, as defined in the agreements, within the periods set forth therein. The severance for the executive officers consists of continued base salary payments at the then-current rate, including the payment of health insurance premiums, for the period specified in each agreement, which ranges from 12 to 18 months, plus a payment equal to between one and one and a half times the executive's cash bonus in the previous year. In addition, the executive officers receive accelerated vesting on all their unvested stock awards as if they had remained employed by us for between 12 and 18 months from the date of termination. In the event that the termination occurs within 24 months of a change in control, as defined in the agreements, the severance for the executive officers consists of lump sum payments equal to between 18 and 24 months of base salary at the then-current rate, the payment of health insurance premiums for the period specified in each agreement, which ranges from 12 to 18 months, plus a payment equal to between one and one and a half times the executive's cash bonus in the previous year. In addition, all outstanding unvested stock awards will vest immediately. The severance for the other executives consist of continued payments at the then-current base compensation rate for a period of six months. All of the agreements specify that any earnings from employment or consulting during this period will offset any salary continuation payments due from us. The maximum payments due under these employment agreements would have been \$3.0 million if each such executive officer and other executives were terminated at December 31, 2010.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are subject to interest rate risk. Our investment portfolio is maintained in accordance with our investment policy which defines allowable investments, specifies credit quality standards and limits the credit exposure of any single issuer. Our investment portfolio consists of cash equivalents, both restricted and non-restricted, marketable securities and long-term investments. The average maturity of our investments, excluding our auction rate securities, is approximately one month. Our investments are classified as available-for-sale securities.

To assess our interest rate risk, we performed a sensitivity analysis projecting an ending fair value of our cash equivalents and current marketable securities using the following assumptions: a 12-month time horizon, a 9-month average maturity and a 150-basis-point increase in interest rates. This pro forma fair value would have been \$18,000 lower than the reported fair value of our investments at December 31, 2010.

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All of our investment securities are classified as available-for-sale and therefore reported on the balance sheet at market value. Our investment securities consist of high-grade auction rate securities, corporate debt securities and government agency securities. As of December 31, 2010, our long-term investments included (at par value) \$6.5 million of auction rate securities secured by municipal bonds and student loans. At December 31, 2010, the auction rate securities we held had Standard and Poor's credit ratings of BBB or AAA. Our auction rate securities are debt instruments with a long-term maturity and with an interest rate that is reset in short intervals through auctions. The recent conditions in the global credit markets have prevented some investors from liquidating their holdings of auction rate securities because the amount of securities submitted for sale has exceeded the amount of purchase orders for such securities. If there is insufficient demand for the securities at the time of an auction, the auction may not be completed and the interest rates may be reset to predetermined higher rates. When auctions for these securities fail, the investments may not be readily convertible to cash until a future auction of these investments is successful or they are redeemed or mature.

Since February 2008, there has been insufficient demand at auction for all of our auction rate securities held at December 31, 2010. As a result, these affected securities are currently not liquid, and we could be required to hold them until they are redeemed by the issuer or to maturity. As of December 31, 2010, we had recognized \$1.5 million of losses related to those auction rate securities by adjusting their carrying value. The market value of these securities has partially recovered from the lows that created the losses. As of December 31, 2010, we had recorded cumulative unrealized gains of \$0.5 million. Any future decline in market value may result in additional losses being recognized.

The valuation of our auction rate security investment portfolio is subject to uncertainties that are difficult to predict. The fair values of these securities are estimated utilizing a discounted cash flow analysis or other type of valuation model as of December 31, 2010. The key drivers of the valuation model include the expected term, collateralization underlying the security investments, the creditworthiness of the counterparty, the timing of expected future cash flows, rates of default of the underlying assets, discount rates, and the expectation of the next time the security is expected to have a successful auction. These securities were also compared, when possible, to other observable market data with similar characteristics to the securities held by us.

In the event we need to access the funds that are not currently liquid, we will not be able to do so without the possible loss of principal, until a future auction for these investments is successful or they are redeemed by the issuer or they mature. If we are unable to sell these securities in the market or they are not redeemed, then we may be required to hold them to maturity. We do not anticipate a need to access these funds for operational purposes for the foreseeable future. We will continue to monitor and evaluate these investments on an ongoing basis for impairment. Based on our ability to access our cash and other short-term investments, our expected operating cash flows, and our other sources of cash, we do not anticipate that the potential illiquidity of these investments will affect our ability to execute our current business plan.

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ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Stockholders of Vical Incorporated

We have audited the accompanying balance sheets of Vical Incorporated as of December 31, 2010 and 2009, and the related statements of operations, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2010. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with 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 financial statements referred to above present fairly, in all material respects, the financial position of Vical Incorporated at December 31, 2010 and 2009, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2010, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Vical Incorporated's internal control over financial reporting as of December 31, 2010, based on the criteria established in Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated March 4, 2011 expressed an unqualified opinion thereon.

/s/ ERNST & YOUNG LLP

San Diego, California

March 4, 2011

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(in thousands, except per share data)

	December 31,	
	2010	2009
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 47,320	\$ 25,873
Marketable securities, available-for-sale	5,037	18,385
Restricted cash	2,911	2,827
Receivables and other assets	940	1,349
Total current assets	56,208	48,434
Long-term investments	5,434	5,477
Property and equipment, net	7,560	9,260
Intangible assets, net	3,247	3,743
Other assets	458	458
Total assets	\$ 72,907	\$ 67,372
LIABILITIES AND STOCKHOLDERS EQUITY		
Current liabilities:		
Accounts payable and accrued expenses	\$ 6,334	\$ 8,020
Deferred revenue		1,990
Total current liabilities	6,334	10,010
Long-term liabilities:		
Deferred rent	2,211	2,380
Commitments and contingencies (Notes 6, 8 and 10)		
Stockholders' equity:		
Preferred stock, \$0.01 par value, 5,000 shares authorized, none issued and outstanding		
Common stock, \$0.01 par value, 160,000 shares authorized, 71,640 shares issued and outstanding at December 31, 2010, and 80,000 shares authorized, 53,781 shares issued and outstanding at December 31, 2009	716	538
Additional paid-in capital	380,929	341,302
Accumulated deficit	(317,755)	(287,370)
Accumulated other comprehensive income	472	512
Total stockholders' equity	64,362	54,982
Total liabilities and stockholders' equity	\$ 72,907	\$ 67,372

See accompanying notes to financial statements

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	Years ended December 31,		
	2010	2009	2008
Revenues:			
Contract and grant revenue	\$ 6,249	\$ 3,692	\$ 2,146
License and royalty revenue	2,462	8,994	5,810
Total revenues	8,711	12,686	7,956
Operating expenses:			
Research and development	19,692	23,449	25,532
Manufacturing and production	11,436	10,354	11,046
General and administrative	8,798	7,469	8,721
Total operating expenses	39,926	41,272	45,299
Loss from operations	(31,215)	(28,586)	(37,343)
Other income (expense):			
Investment and other income, net	830	30	468
Interest expense		(2)	(21)
Net loss	\$ (30,385)	\$ (28,558)	\$ (36,896)
Basic and diluted net loss per share	\$ (0.51)	\$ (0.61)	\$ (0.93)