IDERA PHARMACEUTICALS, INC.
Form 10-K
March 10, 2011

Table of Contents

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

FORM 10-K

(Mark One)

þ **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

o **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: 001-31918

IDERA PHARMACEUTICALS, INC.
(Exact name of Registrant as specified in its charter)

Delaware	**04-3072298**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
167 Sidney Street Cambridge, Massachusetts	**02139**
(Address of principal executive offices)	**(Zip Code)**

(617) 679-5500
(Registrant s telephone number, including area code)

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

Title of Class:	**Name of Each Exchange on Which Registered**
Common Stock, $.001 par value (Including Associated Preferred Stock Purchase Rights)	**NASDAQ Global Market**

Securities registered pursuant to Section 12(g) of the Act: None

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

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

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 the filing requirements for the past 90 days. Yes þ No o

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 (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes o No o

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§ 229.405) is not contained herein, and will not be contained, to the best of the 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. þ

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

Large accelerated filer o	Accelerated filer þ	Non-accelerated filer o	Smaller reporting company o
		(Do not check if a smaller reporting company)	

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

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant was $81,882,000 based on the last sale price of the registrant s common stock as reported on the NASDAQ Global Market on June 30, 2010. As of February 25, 2011, the registrant had 27,600,324 shares of common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Registrant s Proxy Statement with respect to the Annual Meeting of Stockholders to be held in June, 2011 are incorporated by reference into Items 10, 11, 12, 13 and 14 of Part III of this Form 10-K.

IDERA PHARMACEUTICALS, INC.

FORM 10-K

INDEX

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Table of Contents

FORWARD-LOOKING STATEMENTS

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, and Section 21E of the Securities Exchange Act of 1934, as amended. All statements, other than statements of historical fact, included or incorporated in this report regarding our strategy, future operations, collaborations, intellectual property, financial position, future revenues, projected costs, prospects, plans, and objectives of management are forward-looking statements. The words believes, anticipates, estimates, plans, expects, intends, may, could, should, potential, likely, projects, continue, will, and wo expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. We cannot guarantee that we actually will achieve the plans, intentions or expectations disclosed in our forward-looking statements and you should not place undue reliance on our forward-looking statements. There are a number of important factors that could cause our actual results to differ materially from those indicated or implied by forward-looking statements. These important factors include those set forth below under Part I, Item 1A Risk Factors. These factors and the other cautionary statements made in this Annual Report on Form 10-K should be read as being applicable to all related forward-looking statements whenever they appear in this Annual Report on Form 10-K. In addition, any forward-looking statements represent our estimates only as of the date that this Annual Report on Form 10-K is filed with the SEC and should not be relied upon as representing our estimates as of any subsequent date. We do not assume any obligation to update any forward-looking statements. We disclaim any intention or obligation to update or revise any forward-looking statement, whether as a result of new information, future events or otherwise.

Table of Contents

PART I.

Item 1. *Business*

Overview

We are engaged in the discovery and development of DNA- and RNA-based drug candidates targeted to Toll-Like Receptors, or TLRs, to treat infectious diseases, autoimmune and inflammatory diseases, cancer, and respiratory diseases, and for use as vaccine adjuvants. Drug candidates are compounds that we are developing and that have not been approved for any commercial use. TLRs are specific receptors present in immune system cells that recognize the DNA or RNA of bacteria or viruses and initiate an immune response. Relying on our expertise in DNA and RNA chemistry, we have designed and created proprietary TLR agonists and antagonists to modulate immune responses. A TLR agonist is a compound that stimulates an immune response through the targeted TLR. A TLR antagonist is a compound that blocks activation of an immune response through the targeted TLR.

Our business strategy is to advance applications of our TLR-targeted drug candidates in multiple disease areas simultaneously. We are advancing some of these applications through internal programs, and we seek to advance other applications through collaborative alliances with pharmaceutical companies. Collaborators provide the necessary resources and drug development experience to advance our compounds in their programs. Upfront payments and milestone payments received from collaborations help to provide us with the financial resources for our internal research and development programs.

Our internal programs are focused on developing TLR-targeted drug candidates for the potential treatment of infectious diseases, autoimmune and inflammatory diseases, cancer, and respiratory diseases, and for use as vaccine adjuvants.

Infectious disease program. We have completed two Phase 1 clinical trials of IMO-2125, a TLR9 agonist, in patients with chronic hepatitis C virus, or HCV, infection. In our first Phase 1 trial, we evaluated IMO-2125 in patients with chronic HCV infection who had no response to a prior regimen of the current standard of care therapy. We refer to these patients as null-responder HCV patients. We conducted our second Phase 1 clinical trial of IMO-2125 in combination with ribavirin, an antiviral medication, in patients with chronic HCV infection who have not received prior treatment for their HCV infection. We refer to these patients as treatment-naïve HCV patients. We intend to initiate enrollment in a 12-week Phase 2 randomized clinical trial of IMO-2125 plus ribavirin in treatment-naïve HCV patients in the second quarter of 2011.

Autoimmune and inflammatory disease program. We have completed two Phase 1 clinical trials of IMO-3100, an antagonist of TLR7 and TLR9, in healthy subjects. We also have evaluated IMO-3100 and other antagonists of TLR7 and TLR9 in mouse models of lupus, rheumatoid arthritis, multiple sclerosis, psoriasis, colitis, pulmonary inflammation, and hyperlipidemia. We are currently conducting nonclinical studies of IMO-3100, in light of some reversible immune responses that were observed in the 13-week nonclinical toxicology studies we had conducted to support the initiation of Phase 2 clinical trials and that were inconsistent with observations in our other nonclinical studies of IMO-3100. We expect to complete these nonclinical studies during the first half of 2011 and intend to submit to the FDA the results of these nonclinical studies and a protocol for a Phase 2 clinical trial of IMO-3100 in a selected autoimmune disease indication during the third quarter of 2011.

Cancer program. We are studying RNA-based compounds that act as agonists of TLR7 and/or TLR8, which we refer to as stabilized immune modulatory RNA, or SIMRA, compounds, in preclinical models of hematological cancers.

We have selected IMO-4200 as our lead dual TLR7/TLR8 agonist drug candidate for the treatment of hematological malignancies and plan to outline a development program strategy and timeline during the first half of 2011. In preclinical models, IMO-4200 has demonstrated antitumor activity both as monotherapy and in combination with selected targeted drugs currently approved for cancer treatment.

Respiratory disease program. We currently are evaluating the next steps in developing IMO-2134, a TLR9 agonist, in asthma and allergy. IMO-2134 was created by us and selected by Novartis International Pharmaceutical, Ltd., or Novartis, as a lead drug candidate for asthma and allergies under our research collaboration with Novartis that was terminated by Novartis in February 2010. During the term of the research collaboration, Novartis initiated a

Table of Contents

Phase 1 clinical trial of IMO-2134. In connection with the termination, we regained development and commercialization rights to IMO-2134.

Vaccine adjuvant program. We have identified novel RNA-based compounds that act as agonists of TLR3. Our TLR3 agonists have shown potent activity when used as vaccine adjuvants in preclinical studies. We are currently expanding preclinical evaluation of our TLR3 agonist compounds.

In addition to our internal programs, we currently are collaborating with two pharmaceutical companies to advance other applications of our TLR-targeted compounds. We are collaborating with Merck KGaA for the use of TLR9 agonists in cancer treatment, excluding cancer vaccines. Merck KGaA is conducting clinical trials of IMO-2055, a TLR9 agonist, in head and neck cancer, colorectal cancer and non-small cell lung cancer. We also are collaborating with Merck Sharp & Dohme Corp. (formerly Merck & Co., Inc.), which is referred to herein as Merck, for the use of TLR7, TLR8, and TLR9 agonists as vaccine adjuvants in the fields of cancer, infectious diseases, and Alzheimer s disease. Merck KGaA and Merck are not related.

Our Business Strategy

We believe that our drug candidates targeted to TLRs have broad potential applications in the treatment of infectious diseases, autoimmune and inflammatory diseases, cancer, and respiratory diseases, and for use as vaccine adjuvants. To develop the potential of our discoveries in multiple areas simultaneously, we are advancing some of these applications through internal programs and seeking to advance other applications through collaborations with pharmaceutical companies.

We have entered into collaborative alliances for application of our technology in multiple therapeutic areas. We believe that Merck KGaA and Merck provide the necessary resources and expertise to advance our programs with them. In addition, we have received upfront payments and milestone payments from Merck KGaA and Merck that have helped to finance our internal research and development programs. We may also receive additional payments if agreed upon milestones are achieved and royalties if any commercial products result from our collaborations.

As we continue to advance our clinical evaluation of IMO-2125 in chronic HCV infection, our clinical evaluation of IMO-3100 in autoimmune and inflammatory diseases, and our preclinical programs, we may enter into additional collaborations for one or more of these programs. In considering any future collaborations, we will assess the resources and expertise that a potential collaborator may bring to the development and commercialization of our drug candidates.

We intend to stay at the forefront of TLR-based research and discovery by applying our chemistry-based approach to design and create novel and proprietary DNA- and RNA-based compounds targeted to TLRs. We use these compounds, which are synthetic chemical compounds, to populate our expanding research and development programs and to support our collaborations.

Overview of the Human Immune System

The immune system protects the body by working through various mechanisms to recognize and eliminate bacteria, viruses and other infectious agents, referred to as pathogens, and abnormal cells such as cancer cells. These mechanisms initiate a series of signals resulting in stimulation of the immune system in response to the pathogens or abnormal cells. The activities of the immune system are undertaken by its two components: the innate immune system and the adaptive immune system.

The role of the innate immune system is to provide a rapid, non-specific response to a pathogen or to abnormal cells in the body and to activate the adaptive immune system. The innate immune system consists of specialized cells such as macrophages, dendritic cells and monocytes. When the body recognizes a pathogen, it activates cells of the innate immune system, resulting in a cascade of signaling events that cause the production of proteins such as cytokines to fight the infection caused by the pathogen. Unlike the antibodies and cellular responses produced by the adaptive immune system as described below, the proteins produced by the innate immune system are not pathogen-specific. Moreover, once the pathogen is eliminated and the infection is resolved, the innate immune system will not remember the pathogen.

Table of Contents

In contrast to the innate immune system, the adaptive immune system provides a pathogen-specific response to an infection. The adaptive immune system does this through the recognition by certain immune cells of specific proteins, called antigens, which are part of the pathogen or abnormal cell. Signals produced by the innate immune system initiate this process. Upon recognition of an antigen, which could come from pathogens or from cancer cells, the adaptive immune system produces antibodies and antigen-specific immune cells that specifically detect and destroy cells that contain the antigen. This response is referred to as an antigen-specific immune response. An antigen-specific immune response normally takes several weeks to develop the first time. However, once developed, the adaptive immune system remembers the antigen. In this manner, if the pathogen again infects the body, the presence of the memory immunity will allow the adaptive immune system to respond again in a shorter period of time.

TLR-based Drug Discovery Technology

The human immune system is activated by recognizing pathogen-associated molecular patterns, or PAMPs. TLRs comprise a family of receptors that are known to recognize PAMPs. The different TLRs are expressed in various immune system cells and recognize different PAMPs. TLR9 is a receptor that specifically recognizes a PAMP that occurs in the DNA of bacteria and other pathogens, and compounds that mimic bacterial DNA. TLR3, TLR7, and TLR8 are receptors that recognize viral RNA and compounds that mimic viral RNA.

Based on our extensive experience in DNA and RNA chemistry, we are designing and creating novel synthetic DNA- and RNA-based compounds, which as a chemical class are called oligonucleotides. Our compounds are designed to mimic the bacterial DNA and viral RNA that are recognized by TLR3, 7, 8 or 9, with some of our compounds acting as agonists and others acting as antagonists.

TLR9 Agonists

Drug candidates that are agonists of TLR9 mimic bacterial DNA and induce immune responses through TLR9 that may be applicable to the treatment or prevention of infectious diseases, cancer, and asthma and allergies, and may be used as vaccine adjuvants. We have created our TLR9 agonist candidates to activate specific cells of the immune system and produce cytokines and other proteins. These activated cells and the cytokines and other proteins they produce lead to stimulation of both the innate and the adaptive components of the immune system. Furthermore, in preclinical cell culture and animal model studies, we have shown that we can change the immunological activity of our TLR9 agonists by modifying the chemical structure of the molecule. We are using our ability to change immunological activity of our TLR9 agonists to create a growing portfolio of drug candidates that are potentially useful for treating or preventing different diseases.

TLR7 and TLR8 Agonists

We are creating novel synthetic RNA-based compounds that are agonists of TLR7 and/or TLR8, which we refer to as our SIMRA compounds. Our SIMRA compounds are designed to mimic viral RNA. In preclinical studies in cell culture and animal models, these TLR7 and/or TLR8 agonists induced immune responses that we believe may be applicable to the treatment of cancer and infectious diseases and as vaccine adjuvants. We are studying our TLR7 and TLR8 agonists in preclinical models of hematological cancers. In preclinical models, we have observed antitumor activity of these compounds as a monotherapy and in combination with selected targeted drugs currently approved for cancer treatment.

TLR7 and TLR9 Antagonists

We are creating novel classes of drug candidates that are designed to be antagonists of TLR7 and TLR9. Preclinical studies from independent researchers have suggested TLR7 and TLR9 may play a role in some autoimmune and

inflammatory diseases. In cell-based experiments and animal models, our antagonists have blocked immune stimulation in the presence of specific agonists of TLR7 and specific agonists of TLR9. We have evaluated some of our antagonist drug candidates in preclinical mouse models of human autoimmune and inflammatory diseases including lupus, rheumatoid arthritis, multiple sclerosis, psoriasis, colitis, pulmonary inflammation, and hyperlipidemia. In these models, treatment with our antagonist drug candidates was associated with improvement in a number of disease parameters.

Table of Contents

TLR3 Agonists

We are creating a new class of double-stranded RNA-based compounds that act as agonists of TLR3, and are evaluating their potential use as vaccine adjuvants. Vaccines are composed of one or more antigens and one or more adjuvants in an appropriate formulation. The function of the adjuvants is to enhance immune recognition of the antigens and increase the ability of the immune system to make antigen-specific antibodies. In preclinical models, our TLR3 agonists elicited production of cytokines and other proteins. Additionally, our TLR3 agonists promoted increased production of antigen-specific antibodies and cytotoxic T cells compared to responses induced by the antigen alone in preclinical vaccination studies.

Research and Development Programs

We and our collaborators are engaged in the evaluation of TLR-targeted drug candidates in multiple therapeutic areas. The following table summarizes the disease areas and the development status of our programs.

INTERNAL RESEARCH AND DEVELOPMENT PROGRAMS

Drug candidate(s)	Application	Development Status
Infectious Diseases		
IMO-2125 (TLR9 agonist) TLR7, 8, and 9 agonists	Chronic Hepatitis C Virus Infection Viral Infectious Diseases	Phase 2 Planned Second Quarter 2011 Research
Autoimmune and Inflammatory Diseases		
IMO-3100 (dual TLR7/TLR9 antagonist)	Healthy Subjects	Phase 1 Clinical Trial Completed
	Lupus, Psoriasis, Rheumatoid Arthritis, Hyperlipidemia	Research
Cancer		
IMO-4200 (dual TLR7, TLR8 agonist)	Hematological Malignancies	Lead Candidate
Respiratory Diseases		
IMO-2134 (TLR9 agonist)	Asthma, Allergies	Phase 1 Clinical Trial Conducted by Novartis during the Collaboration Period
Vaccine Adjuvants		
TLR3 agonists	Infectious Diseases, other	Research

COLLABORATIVE ALLIANCES

Drug candidate(s)	Application	Development Status
Cancer Merck KGaA		
IMO-2055 (EMD 1201081) (TLR9 Agonist) in combinations with other anticancer agents	Head and Neck Cancer, Second-line Head and Neck Cancer, First-line Colorectal Cancer Lung Cancer	Phase 2 Clinical Trial Phase 1b Clinical Trial Phase 1b Clinical Trial Phase 1b Clinical Trial

Vaccine Adjuvants	*Merck Sharp & Dohme Corp.*	
TLR7, 8, and 9 agonists	Cancer, Infectious Diseases, Alzheimer s Disease	Research

Table of Contents

Internal Research and Development Programs

Infectious Diseases

We and others have conducted preclinical studies in human cell-based assays in which TLR agonists have activated cells of the immune system and induced these cells to secrete cytokines and other proteins that lead to further immune responses. We believe that certain agonists of TLRs 7, 8, and 9 can induce immune system responses, which may have potential therapeutic applicability in infectious diseases, including those caused by viruses.

Our most advanced TLR-targeted drug candidates in infectious diseases are our DNA-based TLR9 agonists, which have been shown to induce high levels of interferon-alpha in preclinical models. Interferon-alpha is a protein that has been recognized to stimulate the immune system and is a component of the current standard of care for chronic HCV infection.

Hepatitis C IMO-2125. Chronic HCV infection causes inflammation of the liver, which significantly increases the risk that a patient will develop liver failure or liver cancer. The World Health Organization has reported that HCV is responsible for more than 50% of all liver cancer cases and two-thirds of all liver transplants in the developed world. The World Health Organization has estimated that about 200 million people are chronically infected with HCV worldwide and that an additional 3 million to 4 million people are infected each year. The Centers for Disease Control and Prevention have estimated that approximately 3 million people in the United States are chronically infected with HCV. Genotype 1 HCV, which is the type of HCV most resistant to current standard of care therapy, is the most prevalent form of HCV in the United States, Europe, and Japan. Currently, the standard of care treatment for chronic HCV infection is based on combination therapies that include a single recombinant interferon-alpha protein plus ribavirin, an antiviral medication.

We and other independent researchers have shown in preclinical studies that TLR9 agonists induce many proteins, including natural interferon-alpha proteins and other proteins with antiviral activity. We believe that the combined effect of these natural interferon-alpha proteins and other antiviral proteins may produce a broader or stronger antiviral effect than is obtained with a single recombinant interferon-alpha protein.

We have selected IMO-2125, a synthetic DNA-based TLR9 agonist, as our lead candidate for the treatment of chronic HCV infection. In preclinical models, including cultures of human immune cells and in nonhuman primates, IMO-2125 induced high levels of natural interferon and other antiviral proteins. The proteins induced by IMO-2125 in human immune cell cultures and in plasma from non-human primates dosed with IMO-2125 showed potent activity for inhibiting HCV RNA production in cell-based assays.

In May 2007, we submitted an Investigational New Drug, or IND, application for IMO-2125 to the United States Food and Drug Administration, or FDA. In September 2007, we initiated a Phase 1 clinical trial of IMO-2125 in patients with genotype 1 chronic HCV infection who had no response to a prior regimen of the current standard of care therapy specified by the protocol as patients who failed to achieve a 2 $\log_{10}$ reduction in HCV viral load after at least 12 weeks of treatment with the current standard of care therapy. We refer to these patients as null-responder HCV patients. HCV viral load refers to the concentration of virus in the blood. A $\log_{10}$ reduction means a decrease in virus concentration to 10% of the original concentration. A 2 $\log_{10}$ reduction means a decrease to 1% of the original concentration. The clinical trial was conducted at a total of eleven sites in the United States with a total of 58 patients. In the trial, we enrolled cohorts of ten patients at escalating IMO-2125 dose levels of 0.04 mg/kg/week, 0.08 mg/kg/week, 0.16 mg/kg/week, 0.32 mg/kg/week, and 0.48 mg/kg/week. Of the ten patients in a cohort, eight were randomized to receive IMO-2125 treatment and two were randomized to receive placebo treatment. Patients received a single dose of IMO-2125 or placebo once per week by subcutaneous injection for four weeks. Based on interim results from these cohorts, we enrolled seven additional patients who received 0.16 mg/kg of IMO-2125 twice weekly for four weeks.

The primary objective of the trial was to assess the safety of IMO-2125 at each dose level. We also evaluated the effects of IMO-2125 on HCV RNA levels and on immune system activation in this trial.

We presented results from the Phase 1 clinical trial of IMO-2125 in null-responder HCV patients at scientific meetings in April 2010 and in October 2010. IMO-2125 was well tolerated at all dose levels in the trial. The most common treatment-related adverse events were flu-like symptoms that typically lasted less than one day, injection site reactions and headache. IMO-2125-treated patients showed dose-dependent increases in natural interferon-

Table of Contents

alpha and other antiviral proteins. In addition, an increasing percentage of patients, ranging from 44% at the 0.08 mg/kg/week dose level to 88% at the 0.48 mg/kg/week dose level, achieved a maximum reduction in viral load of 1 $\log_{10}$ or more at least once during the four-week treatment period. In contrast, none of the patients who received placebo treatment or IMO-2125 at the 0.04-mg/kg/week dose level achieved a maximum reduction in viral load of 1 $\log_{10}$ or greater at any time during the four-week treatment period. At the two highest dose levels, the median maximum viral load reduction achieved at any time during the treatment period was 1.6 $\log_{10}$. Consistent with the proposed mechanism of action, induction of serum concentrations of endogenous interferon-alpha correlated with reductions in viral load.

We also conducted a Phase 1 clinical trial of IMO-2125 in combination with ribavirin, an antiviral medication approved for use in combination with interferon-alpha in the treatment of HCV infection, in treatment-naïve patients with genotype 1 chronic HCV infection. We initiated the trial in October 2009. In this clinical trial, a total of 63 patients received IMO-2125 or a control article by subcutaneous injection once per week for four weeks at escalating dose levels in combination with daily oral administration of standard doses of ribavirin. Fifteen patients were enrolled in the first cohort, with 12 randomized to receive IMO-2125 at 0.08 mg/kg/week and ribavirin and three randomized to receive placebo and ribavirin as the control. Eighteen patients were enrolled in the second cohort, with 12 randomized to receive IMO-2125 at 0.16 mg/kg/week and ribavirin and six randomized to receive pegylated recombinant alfa-2a interferon and ribavirin as the control. The third cohort enrolled 30 patients randomized 12:12:6 to receive IMO-2125 at 0.32 mg/kg/week, IMO-2125 at 0.16 mg/kg twice per week, or pegylated recombinant alfa-2a interferon, respectively, all with ribavirin. The primary objective of the trial was to assess the safety and tolerability of IMO-2125 in combination with ribavirin. In addition, we monitored the effect of treatment on HCV RNA levels. The clinical trial was conducted at sites in France, Russia, and Hungary.

In December 2010, we announced preliminary data from the Phase 1 clinical trial of IMO-2125 in treatment-naïve HCV patients. IMO-2125 plus ribavirin was well tolerated with no treatment-related serious adverse events and no treatment discontinuations. The most common adverse events observed with IMO-2125 treatment were flu-like symptoms and injection site reactions. Of the 48 patients receiving IMO-2125, none had neutropenia requiring intervention and four had platelet counts drop below the normal range during the four-week treatment period. Of the 12 patients receiving pegylated recombinant alfa-2a interferon plus ribavirin, two patients developed neutropenia requiring intervention and seven patients had platelet counts drop below the normal range. IMO-2125 induced substantial declines in viral levels when measured at two days after the first dose at all dose levels. At the mid-week evaluation in the fourth week of treatment, mean viral load reductions with the three higher-dose IMO-2125 regimens ranged from -2.0 to -3.4 $\log_{10}$. Patients who received pegylated recombinant alfa-2a interferon plus ribavirin achieved a mean viral load reduction of -3.8 $\log_{10}$ at the same timepoint. As an additional measure of efficacy, serum concentrations of liver enzymes decreased during the treatment period and were within the normal range by the end of the fourth week of treatment in the majority of IMO-2125-treated patients. We plan to present detailed results of this study at a scientific meeting in the second quarter of 2011.

We are planning a 12-week Phase 2 clinical trial of IMO-2125 plus ribavirin with a control arm of pegylated recombinant alfa-2a interferon plus ribavirin in approximately 80 treatment-naïve HCV patients. Our objectives for the Phase 2 clinical trial will be to determine optimal dosing, obtain longer-term safety data, and generate additional antiviral activity data. We intend to initiate enrollment in the Phase 2 clinical trial in the second quarter of 2011. We intend for the trial to provide the basis for subsequent clinical development of IMO-2125 as an alternative to recombinant interferon in combination therapy with direct-acting antiviral agents.

We have formed a Hepatitis C Clinical Advisory Board to advise us on the clinical development of IMO-2125 for the treatment of chronic HCV infection. Members of our Hepatitis C Clinical Advisory Board include leading hepatologists from Europe and the United States.

Viral Diseases. In addition to our TLR9 agonists such as IMO-2125, we have created synthetic RNA-based compounds that mimic viral RNA and induce immune responses by functioning as agonists of TLR7 and/or TLR8. We are actively researching these compounds, and in human cell-based assays and in vivo in non-human primates, these compounds have induced immune responses that may be applicable to the treatment of viral infectious diseases.

Table of Contents

Autoimmune and Inflammatory Diseases

In autoimmune diseases such as lupus, psoriasis, and rheumatoid arthritis, the immune system forms autoantibodies to a molecule that is a normal part of the body. The autoantibodies may bind RNA, DNA, or complexes that contain RNA or DNA. Independent researchers have reported that TLR7 and TLR9 may recognize autoantibody complexes that contain RNA or DNA and induce further immune responses that include cytokine production, inflammation, and tissue damage. Independent researchers have also reported that patients with autoimmune diseases such as lupus, psoriasis, and rheumatoid arthritis have increased incidence of hyperlipidemia and other cardiovascular risk factors.

We have identified DNA-based compounds that in preclinical studies act as antagonists of TLR7 and TLR9. We believe that these antagonists may have application in the treatment of autoimmune diseases by inhibiting TLR7- or TLR9-mediated responses to the immune complex and thereby interfering with the inflammatory disease progression caused by activation of the immune system. Additionally, we believe that TLR antagonists may improve the treatment of hyperlipidemia and other cardiovascular risk factors associated with some autoimmune diseases.

We have continued to evaluate these TLR7 and TLR9 antagonists in various preclinical studies. In April 2010, we presented preclinical data which showed that treatment with a TLR7/TLR9 antagonist compound reduced symptoms of atherosclerosis in a mouse model. In November 2010, we presented results from studies demonstrating dose-dependent reduction of cardiovascular disease markers by a TLR7/TLR9 antagonist in hyperlipidemic mice. In November 2010, we also presented preclinical data showing that once-weekly doses of a TLR7/TLR9 antagonist, IMO-3100, in non-human primates led to sustained suppression of TLR7- and TLR9-mediated immune responses over four weeks of treatment and presented results from a preclinical study in which blood cells from healthy females produce higher levels of pro-inflammatory cytokines in response to TLR7 stimulation than do blood cells from healthy male subjects. In February 2011, we presented additional data from studies in mice that are genetically predisposed to develop autoimmune disease similar to the human autoimmune disease lupus, in which treatment with IMO-3100 suppressed several key disease progression parameters.

In August 2008, we selected IMO-3100 as a lead antagonist drug candidate and initiated preclinical development studies. In November 2009, we submitted to the FDA an IND application for the clinical evaluation of IMO-3100 in autoimmune diseases. In January 2010, we initiated a Phase 1 clinical trial of IMO-3100 in healthy subjects. In this single-dose, dose escalation Phase 1 trial in 36 healthy subjects, IMO-3100 was administered by subcutaneous injection at dose levels of 0.04, 0.08, 0.16, 0.32, and 0.64 mg/kg. At each dose level, six subjects received IMO-3100. An additional six subjects received placebo treatment. The primary objective of the trial was to evaluate the safety and tolerability of IMO-3100. Secondary objectives were to characterize the pharmacokinetic profile of IMO-3100 and to assess the pharmacodynamic mechanism of action of IMO-3100. The pharmacodynamic mechanism of action is how IMO-3100 engages the immune system in the targeted manner, which we assessed through measurement of the inhibition of TLR7 and TLR9-mediated cytokine induction in peripheral blood mononuclear cells, or PBMCs. The trial was conducted at a single U.S. site.

In October 2010 we announced results from the single-dose Phase 1 clinical trial of IMO-3100. IMO-3100 was well tolerated at all dose levels in the trial. There were no serious adverse events, and mild injection site reactions were the most frequent adverse event. The intended target engagement of TLR7 and TLR9 was observed through inhibition of TLR7 and TLR9-mediated cytokine induction in PBMCs of study subjects after IMO-3100 treatment at dosages of 0.32 and 0.64 mg/kg. Induction of certain cytokines remained suppressed for up to five days in IMO-3100 treated subjects. There was no consistent effect on cytokine induction in the PBMCs of placebo-treated subjects.

We have also conducted a four-week multiple-dose Phase 1 clinical trial of IMO-3100 in 24 healthy subjects that we initiated in July 2010 and completed in the third quarter of 2010. In this trial, IMO-3100 was administered in two dosing regimens for four weeks, with eight subjects per regimen. Eight additional subjects received placebo injections.

No treatment-related discontinuations or serious adverse events were reported. We intend to present results of the multiple-dose Phase 1 clinical trial at a scientific meeting in the second quarter of 2011.

Table of Contents

We intend for the next step in the clinical development of IMO-3100 to be a Phase 2 clinical trial in a selected autoimmune disease indication. We are currently conducting nonclinical studies of IMO-3100, in light of some reversible immune responses that were observed in the 13-week nonclinical toxicology studies we had conducted to support the initiation of Phase 2 clinical trials and that were inconsistent with observations in our other nonclinical studies of IMO-3100. We expect to complete these nonclinical studies during the first half of 2011 and intend to submit to the FDA a protocol for a Phase 2 clinical trial of IMO-3100 in a selected autoimmune disease indication during the third quarter of 2011.

We have formed an Autoimmune Disease Scientific Advisory Board with leading researchers in the field of autoimmune diseases to assist us with determining a clinical development strategy for our antagonist candidates.

Cancer

The immune system is capable of recognizing cancer cells as abnormal cells, leading to an immune response. However, the body s immune response to cancer cells may be weak or absent. We believe that agonists of TLR7, TLR8, and TLR9 can enhance the body s immune response to cancer cells because TLRs are involved in stimulation of both innate and adaptive immunity.

We have licensed our rights to the use of TLR9 agonists for the treatment of cancer under our collaboration with Merck KGaA, and are exploring on our own the use of TLR7 and TLR8 agonists for the treatment of cancer. We have created synthetic SIMRA compounds that mimic viral RNA and induce immune responses by functioning as agonists of TLR7 and TLR8. In June 2010, we announced publication of studies that showed induction of immune responses consistent with the targeted TLR7/TLR8 mechanism of action and antitumor activity in preclinical models of cancer. In December 2010, we presented data from cell-based assays and from mouse models of lymphoma that showed our lead dual agonist of TLR7 and TLR8, when administered in combination with approved cancer therapy agents, resulted in improved antitumor activity, increased survival compared to single-agent treatments, and evidence of immune activation consistent with the TLR7/TLR8 mechanism of action. In conjunction with the December 2010 data presentation, we announced selection of IMO-4200 as our lead dual TLR7/TLR8 agonist drug candidate. We intend to outline a development program strategy and timeline for IMO-4200 in the treatment of hematological malignancies during the first half of 2011.

Respiratory Diseases

Asthma and allergy conditions are characterized by an imbalance of the immune system. Currently approved agents for the treatment of asthma and allergy conditions, including steroids and antibodies, are generally designed to suppress symptoms of asthmatic or allergic response. Our TLR9 agonists, by comparison, are designed to induce immune responses that could be useful in restoring immune system balance. In preclinical studies conducted by us and our collaborators, our TLR9 agonists caused improvements in multiple indices of allergic conditions. For example, in mouse models of allergy, our TLR9 agonists restored the balance of immunological activity, produced a higher ratio of specific versus non-specific antibodies, reduced the number of pulmonary immune cells that produce allergic inflammation, and improved lung function.

In May 2005, we entered into a research collaboration and option agreement and a separate license, development, and commercialization agreement with Novartis to discover, optimize, develop and commercialize TLR9 agonists as treatments for asthma and allergies. In September 2008, Novartis initiated a Phase 1 clinical trial of QAX935, a novel agonist of TLR9. Novartis terminated the research collaboration and option agreement, effective as of February 2010. This termination canceled Novartis option to implement the license, development and commercialization agreement. In connection with the termination, we regained rights to QAX935, which we refer to as IMO-2134, without any financial obligations to Novartis, and are no longer subject to restrictions under the Novartis agreements on our right

to develop TLR-targeted compounds, including TLR antagonist and TLR antisense compounds, for respiratory diseases. Sponsorship of the clinical trial initiated by Novartis and data from the clinical trial have not been transferred to us. We currently are evaluating the next steps in developing IMO-2134 in asthma and allergy.

Table of Contents

Vaccine Adjuvants TLR3 Agonists

We are creating a new class of double-stranded RNA-based compounds that act as agonists of TLR3 and are evaluating their potential use as vaccine adjuvants. Vaccines are composed of one or more antigens and one or more adjuvants in an appropriate formulation. The function of the adjuvants is to enhance immune recognition of the antigens and increase the ability of the immune system to make antigen-specific antibodies. In preclinical models, our TLR3 agonists stimulated immune responses, including promotion of increased production of antigen-specific antibodies and cytotoxic T cells compared to responses induced by the antigen alone in preclinical vaccination studies.

Collaborative Alliances

Cancer Merck KGaA

In December 2007, we entered into an exclusive, worldwide license agreement with Merck KGaA to research, develop, and commercialize products containing our TLR9 agonists, including IMO-2055, for the treatment of cancer, excluding cancer vaccines. Merck KGaA refers to IMO-2055 as EMD 1201081.

Prior to entering into our agreement with Merck KGaA, we had commenced clinical trials of IMO-2055, including a Phase 1b clinical trial of IMO-2055 in patients with non-small cell lung cancer. In January 2009, we initiated a Phase 1b clinical trial of IMO-2055 in patients with colorectal cancer. In April 2009, we initiated on behalf of Merck KGaA a Phase 1 clinical trial of IMO-2055 in healthy subjects. Merck KGaA agreed to reimburse us for costs associated with trials that we initiated and conducted, including costs associated with the Phase 1b clinical trials of IMO-2055 in patients with non-small cell lung cancer and in patients with colorectal cancer and the Phase 1 clinical trial of IMO-2055 in healthy subjects, that were incurred after February 4, 2008, which is the date our agreement with Merck KGaA became effective. In September 2009, Merck KGaA assumed sponsorship of our ongoing Phase 1b clinical trials of IMO-2055. Merck KGaA is now the sponsor of all clinical trials of IMO-2055 for the treatment of cancer and has assumed responsibility for all further clinical development of IMO-2055 in the treatment of cancer, excluding vaccines.

Ongoing Clinical Trials of IMO-2055 (EMD 1201081)

Phase 2 Clinical Trial Squamous Cell Carcinoma of the Head and Neck, Second line. In December 2009, Merck KGaA initiated a Phase 2 clinical trial of IMO-2055 in patients with recurrent or metastatic squamous cell carcinoma of the head and neck who had received a prior course of cancer therapy and therefore treatment in the Phase 2 clinical trial is referred to as second-line. Under the terms of our agreement with Merck KGaA, we received a milestone payment of 3.0 million (approximately $4.1 million) from Merck KGaA in the first quarter of 2010 related to the initiation of this Phase 2 clinical trial of IMO-2055.

Phase 1b Clinical Trial Squamous Cell Carcinoma of the Head and Neck, First-line. In August 2010, we announced that Merck KGaA initiated a Phase 1b clinical trial of IMO-2055 in treatment of patients with squamous cell carcinoma of the head and neck who had not received any prior cancer therapy and therefore treatment in the trial is referred to as first-line. Under the terms of our agreement with Merck KGaA, we received a milestone payment of 3.0 million (approximately $4.1 million) from Merck KGaA in the third quarter of 2010 related to the initiation of this Phase 1b clinical trial of IMO-2055.

Phase 1b Clinical Trial Non-small Cell Lung Cancer . In December 2007, we initiated a Phase 1b clinical trial of IMO-2055 in patients with non-small cell lung cancer whose cancer had progressed during a prior course of standard therapy. In September 2009, we reported preliminary data from the dose-escalation portion of the trial. As of September 2009, Merck KGaA assumed sponsorship of this trial.

Phase 1b Clinical Trial Colorectal Cancer . In January 2009, we initiated a Phase 1b clinical trial of IMO-2055 in patients with colorectal cancer whose cancer had progressed during a prior course of standard therapy. As of September 2009, Merck KGaA assumed sponsorship of this trial. Under the terms of our agreement with Merck KGaA, we received a milestone payment of 3.0 million (approximately $4.0 million) from Merck KGaA in the second quarter, 2009 related to the initiation of this Phase 1b clinical trial of IMO-2055.

Table of Contents

Prior Clinical Trials of IMO-2055 (EMD 1201081)

In April 2009, we initiated on behalf of Merck KGaA a Phase 1 clinical trial of IMO-2055 monotherapy in healthy subjects. As of March 2010, Merck KGaA assumed sponsorship of this Phase 1 trial.

Prior to entering our collaboration with Merck KGaA, we conducted three Phase 1 clinical trials and one Phase 2 clinical trial of IMO-2055. The Phase 2 clinical trial was a Phase 2 Stage A clinical trial of IMO-2055 monotherapy in patients with metastatic or recurrent clear cell renal cancer.

Vaccine Adjuvants Merck Sharp & Dohme Corp.

Vaccines are composed of one or more antigens and one or more adjuvants in an appropriate formulation. The function of the adjuvants is to enhance immune recognition of the antigens and increase the ability of the immune system to make antigen-specific antibodies.

In preclinical animal models, our TLR7, 8 and 9 agonists have shown adjuvant activity when combined with various types of antigens. Preclinical studies that we conducted with our TLR9 agonists and various antigens have shown improvements in several measures of antigen recognition, such as achievement of higher antibody levels, higher ratios of specific to nonspecific antibodies, and a reduction in the number of doses required to achieve effective antibody levels. We believe that agonists of TLRs 7, 8, and 9 have the potential to be used as adjuvants in vaccines.

In December 2006, we entered into a research collaboration with Merck and granted Merck an exclusive license to develop and commercialize our TLR7, 8, and 9 agonists by incorporating them in therapeutic and prophylactic vaccines being developed by Merck for cancer, infectious diseases, and Alzheimer s disease. The original term of the research collaboration was two years and Merck extended the research collaboration for two additional years to December 2010. Merck and Idera scientists published a paper in March 2010 on the synthesis and immunological activity of novel TLR9 agonists. In June 2010, Merck scientists presented results of preclinical studies showing the enhancement of immune responses and adjuvant activity of various TLR9 agonists alone and in combination with alum.

Collaborative Alliances

An important part of our business strategy is to enter into research and development collaborations, licensing agreements, and other strategic alliances with biotechnology and pharmaceutical corporations that bring expertise and resources to the potential development and commercialization of drugs based on our technology. We are currently a party to collaborations with Merck KGaA and Merck.

Merck KGaA

In December 2007, we entered into an exclusive, worldwide license agreement with Merck KGaA, Darmstadt, Germany, to research, develop and commercialize products containing our TLR9 agonists for the treatment of cancer, excluding cancer vaccines. Under the terms of the agreement, we granted Merck KGaA worldwide exclusive rights to our lead TLR9 agonists, IMO-2055 and IMO-2125, and to a specified number of novel follow-on TLR9 agonists to be identified by Merck KGaA and us under a research collaboration that ended in June 2010, for use in the treatment, cure and delay of the onset or progression of cancer in humans. Under the terms of the agreement:

- In February 2008, Merck KGaA paid us a $40.0 million upfront license fee in Euros of which we received $39.7 million due to foreign currency exchange rates;

Merck KGaA agreed to reimburse future development costs for certain of our on-going IMO-2055 clinical trials, which we continued to conduct on behalf of Merck KGaA until September 2009;

Merck KGaA agreed to pay us up to EUR 264 million in development, regulatory approval, and commercial success milestone payments if products containing our TLR9 agonist compounds are successfully developed and marketed for treatment, cure and/or delay of the onset or progression of cancer in humans; and

Table of Contents

Merck KGaA agreed to pay mid single-digit to low double-digit royalties on net sales of products containing our TLR9 agonists that are marketed.

We have agreed that neither we nor our affiliates will, either directly or through a third party:

Develop or commercialize any TLR9 agonist for use in treating, curing, and delaying the onset or progression of cancer in humans; and

Develop or commercialize IMO-2055 for use outside treating, curing, and delaying the onset or progression of cancer in humans, except as part of vaccine products in the fields of oncology, infectious diseases and Alzheimer s disease, which we are pursuing under our collaboration with Merck.

These restrictions will not limit our ability to research, develop and commercialize vaccine products containing IMO-2055 in the fields of oncology, infectious diseases, and Alzheimer s disease, or to research, develop and commercialize IMO-2125 outside the licensed field as a combination therapy or as a vaccine product.

Under the agreement, Merck KGaA is obligated to pay us royalties, on a product-by-product and country-by-country basis, until the later of the expiration of the patent rights licensed to Merck KGaA and the 10th anniversary of the product s first commercial sale in such country. If the patent rights expire in a particular country before the 10th anniversary of the product s first commercial sale in such country, Merck KGaA s obligation to pay us royalties will continue at a reduced royalty rate until such anniversary. In addition, the applicable product royalties may be reduced if Merck KGaA is required to pay royalties to third parties for licenses to intellectual property rights. Merck KGaA s royalty and milestone obligations may also be reduced if Merck KGaA terminates the agreement based on specified uncured material breaches by us. The agreement may be terminated by either party based upon material uncured breaches by the other party or by Merck KGaA at any time after providing Idera with advance notice of termination.

In February 2009, we amended the license agreement with Merck KGaA so that we could initiate and conduct on behalf of Merck KGaA additional clinical trials of IMO-2055, until such time as Merck KGaA had filed an IND application with the FDA for IMO-2055 and assumed sponsorship of these trials. Under the amendment, Merck KGaA agreed to reimburse us for costs associated with any additional trials that we initiated and conducted.

As of March 2010, Merck KGaA assumed sponsorship of all clinical trials of IMO-2055 for the treatment of cancer and has taken responsibility for all further clinical development of IMO-2055 in the treatment of cancer, excluding vaccines.

Merck Sharp & Dohme Corp. (Merck)

In December 2006, we entered into an exclusive license and research collaboration agreement with Merck to research, develop and commercialize vaccine products containing our TLR7, 8, and 9 agonists in the fields of cancer, infectious diseases and Alzheimer s disease. Under the terms of the agreement, we granted Merck worldwide exclusive rights to a number of our TLR7, 8, and 9 agonists for use in combination with Merck s therapeutic and prophylactic vaccines under development in the fields of cancer, infectious diseases, and Alzheimer s disease. There is no limit to the number of vaccines to which Merck can apply our agonists within these fields. We also agreed with Merck to engage in a two-year research collaboration to generate novel agonists targeting TLR7 and TLR8 and incorporating both Merck and Idera chemistry for use in vaccines in the defined fields. Under the terms of the agreement, Merck extended the research collaboration for two additional years to December 2010.

Under the terms of the agreement:

Merck paid us a $20.0 million upfront license fee;

Merck purchased $10.0 million of our common stock at $5.50 per share;

Merck agreed to fund the research and development collaboration through its term;

Table of Contents

Merck agreed to pay us milestone payments as follows:

up to $165.0 million if vaccines containing our TLR9 agonist compounds are successfully developed and marketed in each of the oncology, infectious disease and Alzheimer s disease fields;

up to $260.0 million if vaccines containing our TLR9 agonist compounds are successfully developed and marketed for follow-on indications in the oncology field and if vaccines containing our TLR7 or TLR8 agonists are successfully developed and marketed in each of the oncology, infectious disease, and Alzheimer s disease fields; and

if Merck develops and commercializes additional vaccines using our agonists, we would be entitled to receive additional milestone payments; and

Merck agreed to pay us mid to upper single-digit royalties on net product sales of vaccines using our TLR agonist technology that are developed and marketed, with the royalty rates being dependent on disease indication and the TLR agonist employed.

Under the agreement, Merck is obligated to pay us royalties, on a product-by-product and country-by-country basis, until the later of the expiration of the patent rights licensed to Merck and the expiration of regulatory-based exclusivity for the vaccine product. If the patent rights and regulatory-based exclusivity expire in a particular country before the 10th anniversary of the product s first commercial sale in such country, Merck s obligation to pay us royalties will continue at a reduced royalty rate until such anniversary, except that Merck s royalty obligation will terminate upon the achievement of a specified market share in such country by a competing vaccine containing an agonist targeting the same toll-like receptor as that targeted by the agonist in the Merck vaccine. In addition, the applicable royalties may be reduced if Merck is required to pay royalties to third parties for licenses to intellectual property rights, which royalties exceed a specified threshold. Merck s royalty and milestone obligations may also be reduced if Merck terminates the agreement based on specified uncured material breaches by us.

Merck may terminate the collaborative alliance without cause upon 90 days written notice to us. Either party may terminate the collaborative alliance upon the other party s filing or institution of bankruptcy, reorganization, liquidation or receivership proceedings, or for a material breach if such breach is not cured within 60 days after delivery of written notice.

Gene Silencing Oligonucleotides (GSO)

Through our expertise in nucleic acid chemistry, we have designed and created a new class of molecules to inhibit gene expression. These gene silencing oligonucleotides, which we refer to as GSOs, are nucleic acid-based and represent a novel approach to selectively silence gene expression. We have identified GSOs that are targeted to TLRs, TLR signaling molecules, and other mammalian proteins. We have studied our GSO compounds in multiple cell culture and animal models and observed potent gene silencing activity. We are actively engaged in preclinical research with our GSOs designed to explore their potential as research reagents and therapeutic agents.

Antisense Technology

We have been a pioneer in the development of antisense technology. We now are using our antisense expertise and technology to validate potential targets in the TLR signaling pathway. Antisense compounds may assist us in identifying drug candidates. We have identified antisense compounds targeted to human TLRs 2, 3, 4, 5, 7, 8, and 9 and to the TLR-associated signaling protein MyD88. We are studying these antisense compounds for potential

applications in multiple disease indications.

We also believe that our antisense technology may be useful to pharmaceutical and biotechnology companies that are seeking to develop drug candidates that down-regulate gene targets discovered by, or proprietary to, such companies. Antisense drug candidates are designed to bind to RNA targets through hybridization, and decrease production of the specific protein encoded by the target RNA. We believe that drugs based on antisense technology may be more effective and cause fewer side effects than conventional drugs in applications with well-defined RNA targets because antisense drugs are designed to intervene in a highly specific fashion in the production of proteins, rather than after the proteins are made.

Table of Contents

We have licensed specified rights related to antisense technology to certain parties. We also have in-licensed certain rights related to antisense technology.

Out-licenses. In 2001 we entered into an agreement with Isis Pharmaceuticals, Inc., under which we granted Isis a license, with the right to sublicense, to our antisense chemistry and delivery patents and patent applications; and we retained the right to use these patents and applications in our own drug discovery and development efforts and in collaborations with third parties. Isis paid us $15.0 million in cash and issued 857,143 shares of its common stock having an aggregate fair market value on the dates on which title to the shares was received of $17.3 million and is required to pay us a mid double-digit percentage of specified sublicense income it receives from some types of sublicenses of our patents and patent applications. To date, we have received $0.3 million in sublicense income from Isis. Also under the agreement, we licensed from Isis specified antisense patents and patent applications, principally Isis suite of RNase H patents and patent applications. We also paid to Isis $0.7 million and issued 1,005,499 shares of common stock having a fair market value of approximately $1.2 million on the date of issuance for this license and are obligated to pay Isis an annual maintenance fee and low single-digit royalties on net sales of antisense products sold that are covered by Isis s patent rights. We have the right to use these patents and patent applications in our drug discovery and development efforts and in some types of third-party collaborations. To date, we have only paid Isis annual maintenance fees and have not paid any royalties. The agreement may be terminated for an uncured material breach by either party. The licenses granted under the Isis agreement terminate upon the last to expire of the patents and patent applications licensed under the agreement. We may terminate at any time the sublicense by Isis to us of the patents and patent applications.

In addition, we are party to two other license agreements involving the license of our antisense patents and patent applications for antisense chemistry and delivery and for specific gene targets, under which we typically are entitled to receive license fees, sublicensing income, research payments, payments upon achievement of developmental milestones, and royalties on product sales.

In-licenses. Our principal in-license related to antisense technology is with University of Massachusetts Medical Center for antisense chemistry and for certain gene targets. Under the terms of our license agreement with University of Massachusetts Medical Center, we are the worldwide, exclusive licensee under a number of U.S. issued patents and various patent applications owned by University of Massachusetts Medical Center relating to the chemistry of antisense oligonucleotides and their use. This license expires upon the expiration of the last to expire of the patents covered by the license. Under the agreement, we have agreed to pay a low single-digit royalty on net product sales, a low double-digit percentage of any sublicense license income we receive, and a small annual license maintenance fee. Since 1999, we have paid approximately $1.7 million to University of Massachusetts Medical Center under this license agreement.

Additionally, we have entered into six other royalty-bearing license agreements under which we have acquired rights to antisense related patents, patent applications, and technology. Under all of these in-licenses, we are obligated to pay low to mid single-digit royalties on our net sales of products or processes covered by a valid claim of a licensed patent or patent application. Under some of these in-licenses, we are required to pay a low double-digit percentage of any sublicense income. All of our in-licenses impose various commercialization, sublicensing, insurance, and other obligations on us, and our failure to comply with these requirements could result in termination of the in-licenses.

Academic and Research Collaborations

We have entered into research collaborations with scientists at leading academic research institutions. These research collaborations allow us to augment our internal research capabilities and obtain access to specialized knowledge and expertise.

In general, our research collaborations may require us to supply compounds and pay various amounts to support the research. Under these research agreements, if a collaborator, solely or jointly with us, creates any invention, we may own exclusively such invention, have an automatic paid-up, royalty-free non-exclusive license or have an option to negotiate an exclusive, worldwide, royalty-bearing license to such invention. Inventions developed solely by our scientists in connection with research collaborations are owned exclusively by us. These collaborative agreements are non-exclusive and may be terminated with limited notice.

Table of Contents

Research and Development Expenses

For the years ended December 31, 2010, 2009 and 2008, we spent approximately $24.2 million, $18.6 million, and $16.2 million on research and development activities. In 2009 and 2008, Merck KGaA sponsored approximately $3.1 million and $1.4 million of our research and development activities. In 2009 and 2008, Merck sponsored approximately $0.8 million and $1.5 million of our research and development activities. Sponsored research and development activities were diminutive in 2010.

Patents, Proprietary Rights and Trade Secrets

Our success depends in part on our ability to obtain and maintain proprietary protection for our drug candidates, technology and know-how, to operate without infringing the proprietary rights of others and to prevent others from infringing our proprietary rights. We use a variety of methods to seek to protect our proprietary position, including filing U.S. and foreign patent applications related to our proprietary technology, inventions and improvements that are important to the development of our business. We also rely on trade secrets, know-how, continuing technological innovation, and in-licensing opportunities to develop and maintain our proprietary position.

We have devoted and continue to devote a substantial amount of our resources into establishing intellectual property protection for:

Novel chemical entities that function as agonists of TLR3, 7, 8 or 9;

Novel chemical entities that function as antagonists of TLR7, 8 or 9; and

Use of our novel chemical entities and chemical modifications to treat and prevent a variety of diseases.

As of March 1, 2011, we owned 73 U.S. patents and U.S. patent applications and 230 patents and patent applications throughout the rest of the world for our TLR-targeted immune modulation technologies. These patents and patent applications include novel chemical compositions of matter and methods of use for our immune modulatory compounds, including IMO-2055, IMO-2125, IMO-2134, IMO 3100 and IMO-4200. To date, all of our intellectual property covering immune modulatory compositions and methods of their use is based on discoveries made solely by us. These patents expire at various dates ranging from 2017 to 2030.

As of March 1, 2011, we also own two U.S. patent applications and one corresponding worldwide patent application for our GSO compounds and methods of their use. Patents issuing from these applications, if any, would expire at their earliest in 2030.

In addition to our TLR-targeted patent portfolio, we are the owner or hold licenses of patents and patent applications related to antisense technology. As of March 1, 2011, our antisense patent portfolio included 101 U.S. patents and patent applications and 124 patents and patent applications throughout the rest of the world. These antisense patents and patent applications include novel compositions of matter, the use of these compositions for various genes, sequences and therapeutic targets, and oral and other routes of administration. Some of the patents and patent applications in our antisense portfolio were in-licensed. These in-licensed patents expire at various dates ranging from 2014 to 2022.

Because patent applications in the United States and many foreign jurisdictions are typically not published until 18 months after filing, or in some cases not at all, and because publications of discoveries in the scientific literature often lag behind actual discoveries, we cannot be certain that we were the first to make the inventions claimed in each of our issued patents or pending patent applications, or that we were the first to file for protection of the inventions set

forth in these patent applications.

Litigation may be necessary to defend against or assert claims of infringement, to enforce patents issued to us, to protect trade secrets or know-how owned by us, or to determine the scope and validity of the proprietary rights of others or to determine the appropriate term for an issued patent. In addition, the U.S. Patent and Trademark Office, or USPTO, may declare interference proceedings to determine the priority of inventions with respect to our patent applications or reexamination or reissue proceedings to determine if the scope of a patent should be narrowed. Litigation or any of these other proceedings could result in substantial costs to and diversion of effort by us, and

Table of Contents

could have a material adverse effect on our business, financial condition and results of operations. These efforts by us may not be successful.

In January 2010, we filed a lawsuit against the USPTO in the United States District Court for the District of Columbia. In light of recent decisions in that court and the Court of Appeals for the Federal Circuit, we believe the USPTO assigned a shorter patent term to some of our U.S. patents than was allowed by law. We filed the lawsuit to obtain a determination of the appropriate patent term for these patents.

We may rely, in some circumstances, on trade secrets and confidentiality agreements to protect our technology. Although trade secrets are difficult to protect, wherever possible, we use confidential disclosure agreements to protect the proprietary nature of our technology. We regularly implement confidentiality agreements with our employees, consultants, scientific advisors, and other contractors and collaborators. However, there can be no assurance that these agreements will not be breached, that we will have adequate remedies for any breach, or that our trade secrets and/or proprietary information will not otherwise become known or be independently discovered by competitors. To the extent that our employees, consultants or contractors use intellectual property owned by others in their work for us, disputes may also arise as to the rights in related or resulting know-how and inventions.

Government Regulation

The testing, manufacturing, labeling, advertising, promotion, distribution, import, export, and marketing, among other things, of drugs are extensively regulated by governmental authorities in the United States and other countries. In the U.S., the FDA regulates pharmaceutical products under the Federal Food, Drug, and Cosmetic Act, or FDCA, and other laws and regulations. Biological products are subject to regulation by the FDA under the FDCA, the Public Health Service Act, and related regulations. Both before and after approval for marketing is obtained, violations of regulatory requirements may result in various adverse consequences, including the FDA s delay in approving or refusal to approve pending applications or supplements, withdrawal of approval, suspension or withdrawal of an approved product from the market, operating restrictions, warning letters, product recalls, product seizures, injunctions, fines, and the imposition of civil or criminal penalties.

The steps required before a new pharmaceutical or biological product may be approved for marketing in the U.S. generally include:

- nonclinical laboratory tests and animal safety tests under the FDA s good laboratory practices, or GLP, regulations;
- the submission to the FDA of an IND application for human clinical testing, which must become effective before human clinical trials may begin within the United States;
- adequate and well-controlled human clinical trials to establish the safety and efficacy of the investigational drug product for each indication or the safety, purity and potency of the biological product for its intended indication;
- the submission to the FDA of a new drug application, or NDA, or a biologics license application, or BLA;
- satisfactory completion of an FDA inspection of the manufacturing facility or facilities involved in the production of the drug to assess compliance with the FDA s regulations on current good manufacturing practices, or cGMPs; and
- FDA approval of the NDA or BLA.

Nonclinical tests include laboratory evaluation of the drug substance, which is the active ingredient, and the drug product, which is the dosage form containing the active ingredient, as well as animal studies to assess the potential safety and pharmacological activity of a drug. The results of the nonclinical tests, together with manufacturing information and analytical and stability data, are submitted to the FDA as part of an IND, which must become effective before human clinical trials in the United States may commence. The IND will automatically become effective 30 days after its receipt by the FDA, unless the FDA before that time raises concerns or questions about the information submitted in the IND. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before clinical trials can proceed. If these issues are unresolved, the FDA may not allow the

Table of Contents

clinical trials to commence. There is no guarantee that submission of an IND will result in the FDA allowing clinical trials to begin.

Clinical trials typically are conducted in three sequential phases, but the phases may overlap or be combined. Clinical trials are conducted under protocols, detailing the objectives of the trials, the parameters to be used in monitoring safety, and the effectiveness criteria to be evaluated. Each protocol must be submitted to the FDA as part of the IND prior to beginning the trial. Each trial, including the study protocol and informed consent information for patients in the trial, must be reviewed and approved by an independent Institutional Review Board, or IRB, for each investigative site before the clinical trial can begin at that site. Subjects must provide informed consent for all trials. The phases of clinical trials are:

In Phase 1, the initial introduction of the drug into human subjects, the drug is usually tested to assess metabolism, pharmacokinetics and pharmacological actions and safety, including side effects associated with increasing doses and, if possible, early evidence of effectiveness. Phase 1 trials may also involve patients diagnosed with the disease or condition for which the study drug is intended and include assessments compatible with the proposed mechanism of action;

Phase 2 usually involves controlled trials in a limited patient population to:

evaluate preliminarily the efficacy of the drug for a specific, targeted condition,

determine dosage tolerance and appropriate dosage for further trials, and

identify possible adverse effects and safety risks; and

Phase 3 trials generally further evaluate clinical efficacy and test further for safety within an expanded patient population with considerations of statistical design and power, to establish the overall risk-benefit relationship of the drug and to provide adequate information for the labeling of the drug.

Phase 1, 2, and 3 testing may not be completed successfully within any specified period, or at all. We, an IRB, or the FDA, may suspend or terminate clinical trials at any time on various grounds, including a finding that the subjects or patients are being exposed to an unacceptable health risk. Additional nonclinical toxicology studies are required after clinical trials have begun. Some of these additional nonclinical toxicology studies may require several years to complete. The FDA can also request that additional clinical trials be conducted as a condition of product approval. Sponsors are required to publicly disseminate information about ongoing and completed clinical trials on a government website administered by the National Institutes of Health, or NIH, and are subject to civil monetary penalties and other civil and criminal sanctions for failing to meet these obligations. Our clinical testing program may be delayed or terminated due to factors such as:

unforeseen safety issues in the clinical trials and/or in the continuing nonclinical toxicology studies;

inability to recruit or retain subjects or patients at the rate we expect;

failure by the subjects and/or the investigators to adhere to protocol requirements;

inability to collect the information required to assess patients adequately for safety and efficacy; and

insufficient evidence of efficacy.

The results of the nonclinical and clinical studies, together with other detailed information, including information on the manufacture and composition of the drug substance and drug product, are submitted to the FDA as part of an NDA or BLA for review and potential marketing approval. The FDA reviews an NDA or BLA to determine, among other things, whether a product is safe and effective for its intended use, and whether the product is being manufactured in accordance with cGMP to assure and preserve the product s identity, strength, quality, purity, and potency. In most cases, the NDA or BLA must be accompanied by a substantial user fee. Before approving an NDA or BLA, the FDA will inspect the manufacturing facility or facilities used to produce the drug substance and drug product for compliance with cGMP regulations. The FDA may deny an NDA or BLA if all applicable regulatory criteria are not satisfied or may require additional clinical, toxicology or chemistry, manufacturing and controls data. Even after an NDA or BLA results in approval to market a product, the FDA

Table of Contents

may limit the approved indications for which the product may be marketed or place other limitations that restrict the commercial application of the product.

If the FDA s evaluation of the NDA or BLA and the inspection of the manufacturing facilities are favorable, the FDA may issue an approval letter, which authorizes commercial marketing of the drug with specific prescribing information for specific indications. After approval, some types of changes to the approved product, such as adding new indications, manufacturing changes and additional labeling claims, are subject to further FDA review and approval of a new NDA or BLA or of an NDA or BLA supplement before the change can be implemented. As a condition of NDA or BLA approval, the FDA may require additional clinical testing, including Phase 4 clinical trials, and may impose other conditions, including labeling restrictions and restrictions on distribution and use of the drug. The FDA may withdraw product approval if compliance with regulatory standards or conditions of the marketing approval is not maintained or if safety problems occur after the product reaches the market. In addition, the FDA requires surveillance programs to monitor the consistency of manufacturing and the safety of approved products that have been commercialized. Holders of an approved NDA or BLA are required to report certain adverse reactions and production problems to the FDA, to provide updated safety and efficacy information, and to comply with requirements concerning advertising and promotional labeling. The agency has the power to require changes in labeling or to prevent further marketing of a product based on new data that may arise after commercialization. In addition, quality control and manufacturing procedures must continue to conform to cGMP requirements after approval, to assure and preserve the quality and stability of the drug product. The FDA periodically inspects manufacturing facilities to assess compliance with cGMP, including its extensive procedural, substantive and record keeping requirements. Also, new federal, state, or local government requirements may be established that could delay or prevent regulatory approval of our products under development.

If the FDA s evaluation of the NDA or BLA or manufacturing facilities is not favorable, the FDA may refuse to approve the NDA or BLA or issue a complete response letter. The complete response letter describes the deficiencies that the FDA has identified in an application and, when possible, recommends actions that the applicant might take to place the application in condition for approval. Such actions may include, among other things, conducting additional safety or efficacy studies after which the sponsor may resubmit the application for further review. Even with the completion of this additional testing or the submission of additional requested information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval. With limited exceptions, the FDA may withhold approval of an NDA or BLA, regardless of prior advice it may have provided or commitments it may have made to the sponsor.

It may take many years and the expenditure of substantial resources to evaluate fully the safety and efficacy of a drug candidate or the safety, purity and potency of a biological product candidate in nonclinical and clinical studies, to qualify appropriate drug or biological product formulations, and to ensure manufacturing processes are compliant with regulations. Data obtained in nonclinical studies or early clinical studies may not be indicative of results that might be obtained in later clinical trials that are often critical to the regulatory approval process. Formulation and/or manufacturing changes may cause delays in the development plan or require re-testing. Many of the activities may be subject to varying interpretations that could limit, delay, or prevent regulatory approval. In addition, requirements for regulatory approval may change at any time during the course of clinical or nonclinical studies, requiring some facets of those studies to be repeated at additional cost and time.

We will also be subject to a variety of foreign regulations governing clinical trials and the marketing and sale of our products. Whether or not FDA approval has been obtained, approval of a product by the comparable regulatory authorities of foreign countries must be obtained prior to the commencement of marketing of the product in those countries. The approval process varies from country to country and the time may be longer or shorter than that required for FDA approval. For marketing outside the U.S., we are also subject to foreign regulatory requirements governing human clinical trials. The requirements governing the conduct of clinical trials, product licensing, approval,

pricing, and reimbursement vary greatly from country to country.

In addition to regulations enforced by the FDA, we are also subject to regulation under the Occupational Safety and Health Act, the Toxic Substances Control Act, the Resource Conservation and Recovery Act, and other current and potential future federal, state, or local regulations. Our research and development activities involve the controlled use of hazardous materials, chemicals and various radioactive compounds. Although we believe that our

Table of Contents

safety procedures for handling and disposing of such materials comply with the standards prescribed by state, federal, and local regulations, the risk of accidental contamination or injury from these materials cannot be completely eliminated. In the event of such an accident, we could be held liable for any damages that result and any such liability could exceed our resources.

Our collaborators under the various license agreements we have completed have assumed responsibility for regulatory issues pertinent to any drug candidates or marketed products that may arise from our collaborations.

Manufacturing

We do not currently own or operate manufacturing facilities for the production of clinical or commercial quantities of any of our drug candidates. We currently rely and expect to continue to rely on other companies for the manufacture of our drug candidates for preclinical and clinical development. We currently source our bulk drug manufacturing requirements from a limited number of contract manufacturers through the issuance of work orders on an as-needed basis. We depend and will continue to depend on our contract manufacturers to manufacture our drug candidates in accordance with cGMP regulations for use in clinical trials. We will ultimately depend on contract manufacturers for the manufacture of our products for commercial sale. Contract manufacturers are subject to extensive governmental regulation.

Under our collaborative agreements with Merck KGaA and Merck, our collaborators are responsible for manufacturing the drug candidates.

Competition

We are developing our TLR-targeted drug candidates for use in the treatment of infectious diseases, autoimmune and inflammatory diseases, respiratory diseases, and cancer, and for use as vaccine adjuvants. For all of the disease areas in which we are developing potential therapies, there are many other companies, public and private, that are actively engaged in discovery, development, and commercializing products and technologies that may compete with our technologies and drug candidates and technology, including TLR targeted compounds as well as non-TLR targeted therapies.

We are developing IMO-2125 for use as an alternative to recombinant interferon in the treatment of HCV. The current standard of care in the treatment of HCV consists of a single recombinant interferon-alpha protein plus ribavarin. If we are able to commercialize IMO-2125 for chronic HCV infection, we will face competition from the interferons currently marketed today and advanced forms of recombinant interferons being developed, including those being developed by Bristol-Myers Squibb Company and Biolex Therapeutics, Inc. In addition, to the extent that a therapy is developed as an alternative to the current standard of care that does not include recombinant interferon or any alternative to recombinant interferon, we may face competition from those therapies as well, such as protease and polymerase inhibitors being developed by Merck, Vertex Pharmaceuticals, Inc. and Pharmasset, Inc. We are also aware of numerous other compounds in clinical trials that target chronic HCV infection through a number of different mechanisms of action, and we believe that there are many additional potential HCV treatments in research or early development. There are also a number of companies developing TLR-targeted compounds for chronic HCV infection, including Dynavax Technologies Corporation, Anadys Pharmaceuticals, Inc., and Gilead Sciences, Inc.

Our principal competitors developing TLR-targeted compounds for autoimmune and inflammatory diseases include Dynavax Technologies Corporation, with its collaborator, GlaxoSmithKline, and for respiratory diseases include AstraZeneca Pharmaceuticals plc, Pfizer, Inc., in collaboration with Sanofi-Aventis Groupe, Cytos Biotechnology, Dynavax Technologies Corporation in collaboration with AstraZeneca Pharmaceuticals plc, and VentiRx Pharmaceuticals.

For our partnered programs, our principal competitors developing TLR-targeted compounds for cancer treatment include Pfizer, Inc., Anadys Pharmaceutical, Inc. and VentiRx Pharmaceuticals. Merck s vaccines using our TLR7, 8 or 9 agonists as adjuvants may compete with vaccines being developed or marketed by GlaxoSmithKline plc, Novartis, Dynavax Technologies Corporation, VaxInnate, Inc., Intercell AG, Cytos Biotechnology AG and Celldex Therapeutics, Inc.

Table of Contents

Some of the potentially competitive products have been in development or commercialized for years, in some cases by large, well established pharmaceutical companies. Many of the marketed products have been accepted by the medical community, patients, and third-party payors. Our ability to compete may be affected by the previous adoption of such products by the medical community, patients, and third-party payors. Additionally, in some instances, insurers and other third-party payors seek to encourage the use of generic products, which makes branded products, such as our drug candidates, potentially less attractive, from a cost perspective, to buyers.

We recognize that other companies, including large pharmaceutical companies, may be developing or have plans to develop products and technologies that may compete with ours. Many of our competitors have substantially greater financial, technical, and human resources than we have. In addition, many of our competitors have significantly greater experience than we have in undertaking preclinical studies and human clinical trials of new pharmaceutical products, obtaining FDA and other regulatory approvals of products for use in health care and manufacturing, and marketing and selling approved products. Our competitors may discover, develop or commercialize products or other novel technologies that are more effective, safer or less costly than any that we are developing. Our competitors may also obtain FDA or other regulatory approval for their products more rapidly than we may obtain approval for ours.

We anticipate that the competition with our products and technologies will be based on a number of factors including product efficacy, safety, availability, and price. The timing of market introduction of our products and competitive products will also affect competition among products. We expect the relative speed with which we can develop products, complete the clinical trials, and approval processes and supply commercial quantities of the products to the market to be important competitive factors. Our competitive position will also depend upon our ability to attract and retain qualified personnel, to obtain patent protection or otherwise develop proprietary products or processes, and protect our intellectual property, and to secure sufficient capital resources for the period between technological conception and commercial sales.

Employees

As of March 1, 2011, we employed 36 individuals. Of our 36 employees, 24 are engaged in research and development and 21 hold a Ph.D., M.D., or equivalent degree. None of our employees is covered by a collective bargaining agreement, and we consider relations with our employees to be good.

Information Available on the Internet

Our internet address is www.iderapharma.com. The contents of our website are not part of this Annual Report on Form 10-K and our internet address is included in this document as an inactive textual reference. We make available free of charge through our web site our Annual Reports 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 12(a) or 15(d) of the Securities Exchange Act of 1934, as amended, as soon as reasonably practicable after we electronically file or furnish such materials to the Securities and Exchange Commission.

Table of Contents

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

RISK FACTORS

Investing in our common stock involves a high degree of risk. You should carefully consider the risks and uncertainties described below in addition to the other information included or incorporated by reference in this Annual Report on Form 10-K before purchasing our common stock. If any of the following risks actually occurs, our business, financial condition or results of operations would likely suffer, possibly materially. In that case, the trading price of our common stock could fall, and you may lose all or part of the money you paid to buy our common stock.

Risks Relating to Our Financial Results and Need for Financing

We have incurred substantial losses and expect to continue to incur losses. We will not be successful unless we reverse this trend.

We have incurred losses in every year since our inception, except for 2002, 2008, and 2009 when our recognition of revenues under license and collaboration agreements resulted in our reporting net income for those years. As of December 31, 2010, we had an accumulated deficit of $351.6 million. We have incurred losses of $91.4 million since January 1, 2001 and losses of $260.2 million prior to December 31, 2000 during which time we were primarily involved in the development of antisense technology. These losses, among other things, have had and will continue to have an adverse effect on our stockholders equity, total assets, and working capital.

We have never had any products of our own available for commercial sale and have received no revenues from the sale of drugs. To date, almost all of our revenues have been from collaborative and license agreements. We have devoted substantially all of our efforts to research and development, including clinical trials, and we have not completed development of any drug candidates. Because of the numerous risks and uncertainties associated with developing drugs, we are unable to predict the extent of any future losses, whether or when any of our drug candidates will become commercially available, or when we will become profitable, if at all. We expect to incur substantial operating losses in future periods.

We will need additional financing, which may be difficult to obtain. Our failure to obtain necessary financing or doing so on unattractive terms could adversely affect our research and development programs and other operations.

We will require substantial funds to conduct research and development, including preclinical testing and clinical trials of our drug candidates. We will also require substantial funds to conduct regulatory activities and to establish commercial manufacturing, marketing, and sales capabilities. We had cash, cash equivalents, and investments of $34.6 million at December 31, 2010. We believe that our existing cash, cash equivalents, and investments will be sufficient to fund our operations at least through March 31, 2012 based on our current operating plan, including the Phase 2 clinical trial of IMO-2125 in HCV patients for which we intend to initiate enrollment in the second quarter of 2011 and nonclinical studies to support the initiation of a Phase 2 clinical trial of IMO-3100 in an initial autoimmune disease indication during this period. We expect to need to raise additional funds to operate our business beyond March 31, 2012.

We expect to seek additional funding through collaborations, the sale or license of assets, or financings of equity or debt securities. We believe that the key factors that will affect our ability to obtain additional funding are:

- the success of our clinical and preclinical development programs;

the success of our existing strategic collaborations with Merck KGaA and Merck;

the cost, timing, and outcome of regulatory reviews;

competitive and potentially competitive products and technologies and investors receptivity to our drug candidates and the technology underlying them in light of competitive products and technologies;

Table of Contents

the receptivity of the capital markets to financings by biotechnology companies generally and companies with drug candidates and technologies such as ours specifically; and

our ability to enter into additional strategic collaborations with biotechnology and pharmaceutical companies and the success of such collaborations.

Additional financing may not be available to us when we need it or may not be available to us on favorable terms. We could be required to seek funds through collaborative alliances or through other means that may require us to relinquish rights to some of our technologies, drug candidates or drugs that we would otherwise pursue on our own. In addition, if we raise additional funds by issuing equity securities, our then existing stockholders will experience dilution. The terms of any financing may adversely affect the holdings or the rights of existing stockholders. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends, and are likely to include rights that are senior to the holders of our common stock. Any additional debt financing or equity that we raise may contain terms, such as liquidation and other preferences, or liens or other restrictions on our assets, which are not favorable to us or our stockholders. If we are unable to obtain adequate funding on a timely basis or at all, we may be required to terminate, modify or delay preclinical or clinical trials of one or more of our drug candidates, fail to establish or delay the establishment of manufacturing, sale or marketing capabilities, curtail research and development programs for new drug candidates and/or possibly relinquish rights to portions of our technology, drug candidates and/or products. For example, we significantly curtailed expenditures on our research and development programs during 1999 and 2000 because we did not have sufficient funds available to advance these programs at planned levels.

Risks Relating to Our Business, Strategy and Industry

We are depending heavily on the success of IMO-2125, IMO-3100, and our collaborative alliances. If we or our collaborators are unable to successfully develop and commercialize our drug candidates, or experience significant delays in doing so, our business will be materially harmed.

We are investing a significant portion of our time and financial resources in the development of our clinical stage lead drug candidates for infectious diseases, IMO-2125, and for autoimmune and inflammatory diseases, IMO-3100. We anticipate that our ability to generate product revenues will depend heavily on the successful development and commercialization of IMO-2125, IMO-3100 and other drug candidates, including drug candidates being developed by our collaborators. The commercial success of these drug candidates will depend on several factors, including the following:

the drug candidates demonstrating an acceptable safety profile in nonclinical studies and during clinical trials;

timely enrollment in our anticipated clinical trials of IMO-2125 and IMO-3100 and other on-going or planned clinical trials, which may be slower than we anticipate, potentially resulting in significant delays;

satisfying conditions imposed on us and/or our collaborators by the FDA or equivalent foreign regulatory authorities regarding the scope or design of our clinical trials;

the ability to demonstrate to the satisfaction of the FDA, or equivalent foreign regulatory authorities, the safety and efficacy of the drug candidates through current and future clinical trials;

the ability to combine our drug candidates and the drug candidates being developed by our collaborators safely and successfully with other therapeutic agents;

timely receipt of necessary marketing approvals from the FDA and equivalent foreign regulatory authorities;

achieving and maintaining compliance with all regulatory requirements applicable to the products;

establishment of commercial manufacturing arrangements with third-party manufacturers;

Table of Contents

the successful commercial launch of the drug candidates, assuming FDA approval is obtained, whether alone or in combination with other products;

acceptance of the products as safe and effective by patients, the medical community and third-party payors;

competition from other companies and their therapies;

changes in treatment regimes;

successful protection of our intellectual property rights from competing products in the United States and abroad; and

a continued acceptable safety and efficacy profile of the drug candidates following marketing approval.

Our efforts to commercialize IMO-2125 and IMO-3100 are at early stages, as we are currently planning the conduct of Phase 2 safety and dose optimization clinical trials of these drug candidates. If we are not successful in commercializing these or our other drug candidates, or are significantly delayed in doing so, our business will be materially harmed.

If our clinical trials are unsuccessful, or if they are delayed or terminated, we may not be able to develop and commercialize our products.

In order to obtain regulatory approvals for the commercial sale of our products, we are required to complete extensive clinical trials in humans to demonstrate the safety and efficacy of our drug candidates. Clinical trials are lengthy, complex, and expensive processes with uncertain results. We may not be able to complete any clinical trial of a potential product within any specified time period. Moreover, clinical trials may not show our potential products to be both safe and efficacious. The FDA or other equivalent foreign regulatory agencies may not allow us to complete these trials or commence and complete any other clinical trials.

The results from preclinical testing of a drug candidate that is under development may not be predictive of results that will be obtained in human clinical trials. In addition, the results of early human clinical trials may not be predictive of results that will be obtained in larger scale, advanced stage clinical trials. Furthermore, interim results of a clinical trial do not necessarily predict final results, and failure of any of our clinical trials can occur at any stage of testing. Companies in the biotechnology and pharmaceutical industries, including companies with greater experience in preclinical testing and clinical trials than we have, have suffered significant setbacks in clinical trials, even after demonstrating promising results in earlier trials.

For example, in December 2010, we announced interim results from a Phase 1 clinical trial of IMO-2125 combined with ribavirin in treatment-naïve patients with chronic HCV infection. However, while these results were positive, these interim results may not be predictive of the final results of this trial or other planned clinical trials of IMO-2125 in combination with other treatments.

Moreover, companies developing drugs targeted to TLRs have experienced setbacks in clinical trials. For example in 2007, Coley Pharmaceutical Group, which since has been acquired by Pfizer, Inc., discontinued four clinical trials for PF-3512676, its investigational TLR9 agonist compound, in combination with cytotoxic chemotherapy in cancer, and suspended its development of a TLR9 agonist, Actilon®, for HCV infection. In July 2007, Anadys Pharmaceuticals, Inc. and its partner Novartis announced that they had decided to discontinue the development of ANA975, the investigational TLR7 agonist compound for HCV infection. Dynavax Technologies Corporation announced in May

2008 discontinuation of the clinical development program for TOLAMBA®, which comprises a TLR9 agonist covalently attached to a ragweed antigen. There are few data on the long-term clinical safety of our lead compounds under conditions of prolonged use in humans, or on any long-term consequences subsequent to human use. Effects seen in nonclinical studies, even if not observed in clinical trials, may result in limitations or restrictions on our clinical trials. We may experience numerous unforeseen events during, or as a result of, preclinical testing, nonclinical testing or the clinical trial process that could delay or inhibit our ability to receive regulatory approval or to commercialize our products. For example, we are conducting additional nonclinical studies of IMO-3100 before we initiate a Phase 2 clinical trial, in light of some reversible immune

Table of Contents

responses that were observed in our 13-week nonclinical toxicology studies and that were inconsistent with our other nonclinical studies of IMO-3100. Other events that could delay or inhibit conduct of our clinical trials include:

- regulators or IRBs may not authorize us to commence a clinical trial or conduct a clinical trial at a prospective trial site;
- nonclinical or clinical data may not be readily interpreted, which may lead to delays and/or misinterpretation;
- our nonclinical tests, including toxicology studies, or clinical trials may produce negative or inconclusive results, and we may decide, or regulators may require us, to conduct additional nonclinical testing or clinical trials or we may abandon projects that we expect may not be promising;
- the rate of enrollment or retention of patients in our clinical trials may be lower than we expect;
- we might have to suspend or terminate our clinical trials if the participating subjects experience serious adverse events or undesirable side effects or are exposed to unacceptable health risks;
- regulators or IRBs may hold, suspend or terminate clinical research for various reasons, including noncompliance with regulatory requirements, issues identified through inspections of manufacturing or clinical trial operations or clinical trial sites, or if, in their opinion, the participating subjects are being exposed to unacceptable health risks;
- regulators may hold or suspend our clinical trials while collecting supplemental information on, or clarification of, our clinical trials or other clinical trials, including trials conducted in other countries or trials conducted by other companies;
- we, along with our collaborators and subcontractors, may not employ, in any capacity, persons who have been debarred under the FDA s Application Integrity Policy, or similar policy under foreign regulatory authorities. Employment of such debarred persons, even if inadvertent, may result in delays in the FDA s or foreign equivalent s review or approval of our products, or the rejection of data developed with the involvement of such person(s);
- the cost of our clinical trials may be greater than we currently anticipate; and
- our products may not cause the desired effects or may cause undesirable side effects or our products may have other unexpected characteristics.

The rate of completion of clinical trials is dependent in part upon the rate of enrollment of patients. For example, in our Phase 1 clinical trial of IMO-2125 in patients with chronic HCV infection who had not responded to the current standard of care therapy, completion of each cohort took longer than anticipated due to enrollment procedures. Patient accrual is a function of many factors, including:

- the size of the patient population;
- the proximity of patients to clinical sites;
- the eligibility criteria for the study;
- the nature of the study, including the pattern of patient enrollment;

the existence of competitive clinical trials; and

the availability of alternative treatments.

We do not know whether clinical trials will begin as planned, will need to be restructured or will be completed on schedule, if at all. Significant clinical trial delays also could allow our competitors to bring products to market before we do and impair our ability to commercialize our products.

Table of Contents

Delays in commencing clinical trials of potential products could increase our costs, delay any potential revenues, and reduce the probability that a potential product will receive regulatory approval.

Our drug candidates and our collaborators drug candidates will require preclinical and other nonclinical testing and extensive clinical trials prior to submission of any regulatory application for commercial sales. In conducting clinical trials, we cannot be certain that any planned clinical trial will begin on time, if at all. Delays in commencing clinical trials of potential products could increase our product development costs, delay any potential revenues, and reduce the probability that a potential product will receive regulatory approval.

Commencing clinical trials may be delayed for a number of reasons, including delays in:

manufacturing sufficient quantities of drug candidate that satisfy the required quality standards for use in clinical trials;

demonstrating sufficient safety to obtain regulatory approval for conducting a clinical trial;

reaching an agreement with any collaborators on all aspects of the clinical trial;

reaching agreement with contract research organizations, if any, and clinical trial sites on all aspects of the clinical trial;

resolving any objections from the FDA or any regulatory authority on an IND application or proposed clinical trial design;

obtaining IRB approval for conducting a clinical trial at a prospective site; and

enrolling patients in order to commence the clinical trial.

The technologies on which we rely are unproven and may not result in any approved and marketable products.

Our technologies or therapeutic approaches are relatively new and unproven. We have focused our efforts on the research and development of RNA- and DNA-based compounds targeted to TLRs. Neither we nor any other company have obtained regulatory approval to market such compounds as therapeutic drugs, and no such products currently are being marketed. It is unknown whether the results of preclinical studies with TLR-targeted compounds will be indicative of results that may be obtained in clinical trials, and results we have obtained in the initial small-scale clinical trials we have conducted to date may not be predictive of results in subsequent large-scale clinical trials. Further, the chemical and pharmacological properties of RNA- and DNA-based compounds targeted to TLRs may not be fully recognized in preclinical studies and small-scale clinical trials, and such compounds may interact with human biological systems in unforeseen, ineffective or harmful ways that we have not yet identified. As a result of these factors, we may never succeed in obtaining regulatory approval to market any product. Furthermore, the commercial success of any of our products for which we may obtain marketing approval from the FDA or other regulatory authorities will depend upon their acceptance by patients, the medical community, and third-party payors as clinically useful, safe, and cost-effective. In addition, if products based upon TLR technology being developed by our competitors have negative clinical trial results or otherwise are viewed negatively, the perception of our TLR technology and market acceptance of our products could be impacted negatively.

Our efforts to educate the medical community on our potentially unique approaches may require greater resources than would be typically required for products based on conventional technologies or therapeutic approaches. The safety, efficacy, convenience, and cost-effectiveness of our products as compared to competitive products will also

affect market acceptance.

We face substantial competition, which may result in others discovering, developing or commercializing drugs before or more successfully than us.

We are developing our TLR-targeted drug candidates for use in the treatment of infectious diseases, autoimmune and inflammatory diseases, respiratory diseases, and cancer, and as vaccine adjuvants. For all of the disease areas in which we are developing potential therapies, there are many other companies, public and private, that are actively engaged in discovering, developing, and commercializing products and technologies that

Table of Contents

may compete with our technologies and drug candidates and technology, including TLR targeted compounds as well as non-TLR targeted therapies.

We are developing IMO-2125 for use as an alternative to recombinant interferon in the treatment of HCV. The current standard of care in the treatment of HCV consists of a single recombinant interferon-alpha protein plus ribavarin. If we are able to commercialize IMO-2125 for chronic HCV infection, we will face competition from the interferons currently marketed today and advanced forms of recombinant interferons being developed, including those being developed by Bristol-Myers Squibb Company and Biolex Therapeutics, Inc. In addition, to the extent that a therapy is developed as an alternative to the current standard of care that does not include recombinant interferon or any alternative to recombinant interferon, we may face competition from those therapies as well, such as protease and polymerase inhibitors being developed by Merck, Vertex Pharmaceuticals, Inc. and Pharmasset, Inc. We are also aware of numerous other compounds in clinical trials that target chronic HCV infection through a number of different mechanisms of action, and we believe that there are many additional potential HCV treatments in research or early development. There are also a number of companies developing TLR-targeted compounds for chronic HCV infection, including Dynavax Technologies Corporation, Anadys Pharmaceuticals, Inc., and Gilead Sciences, Inc.

Our principal competitors developing TLR-targeted compounds for autoimmune and inflammatory diseases include Dynavax Technologies Corporation, with its collaborator, GlaxoSmithKline plc and for respiratory diseases include AstraZeneca Pharmaceuticals plc, Pfizer, Inc., in collaboration with Sanofi-Aventis Groupe, Cytos Biotechnology AG, Dynavax Technologies Corporation in collaboration with AstraZeneca Pharmaceuticals plc, and VentiRx Pharmaceuticals. For our partnered programs, our principal competitors developing TLR-targeted compounds for cancer treatment include Pfizer, Inc., Anadys Pharmaceuticals, Inc. and VentiRx Pharmaceuticals. Merck s vaccines using our TLR7, 8 or 9 agonists as adjuvants may compete with vaccines being developed or marketed by GlaxoSmithKline plc, Novartis, Dynavax Technologies Corporation, VaxInnate, Inc., Intercell AG, Cytos Biotechnology AG, and Celldex Therapeutics, Inc.

Some of these potentially competitive products have been in development or commercialized for years, in some cases by large, well established pharmaceutical companies. Many of the marketed products have been accepted by the medical community, patients, and third-party payors. Our ability to compete may be affected by the previous adoption of such products by the medical community, patients, and third-party payors. Additionally, in some instances, insurers and other third-party payors seek to encourage the use of generic products, which makes branded products, such as our drug candidates, potentially less attractive, from a cost perspective, to buyers.

We recognize that other companies, including large pharmaceutical companies, may be developing or have plans to develop products and technologies that may compete with ours. Many of our competitors have substantially greater financial, technical, and human resources than we have. In addition, many of our competitors have significantly greater experience than we have in undertaking preclinical studies and human clinical trials of new pharmaceutical products, obtaining FDA and other regulatory approvals of products for use in health care and manufacturing, and marketing and selling approved products. Our competitors may discover, develop or commercialize products or other novel technologies that are more effective, safer or less costly than any that we are developing. Our competitors may also obtain FDA or other regulatory approval for their products more rapidly than we may obtain approval for ours.

We anticipate that the competition with our products and technologies will be based on a number of factors including product efficacy, safety, availability, and price. The timing of market introduction of our products and competitive products will also affect competition among products. We expect the relative speed with which we can develop products, complete the clinical trials, and approval processes and supply commercial quantities of the products to the market to be important competitive factors. Our competitive position will also depend upon our ability to attract and retain qualified personnel, to obtain patent protection or otherwise develop proprietary products or processes, and protect our intellectual property, and to secure sufficient capital resources for the period between technological

conception and commercial sales.

Table of Contents

Competition for technical and management personnel is intense in our industry, and we may not be able to sustain our operations or grow if we are unable to attract and retain key personnel.

Our success is highly dependent on the retention of principal members of our technical and management staff, including Dr. Sudhir Agrawal. Dr. Agrawal serves as our Chairman of the Board of Directors, President and Chief Executive Officer. Dr. Agrawal has made significant contributions to the field of oligonucleotide-based drug candidates, and has led the discovery and development of our compounds targeted to TLRs. He is named as an inventor on over 400 patents and patent applications worldwide. Dr. Agrawal provides us with leadership for our management team and research and development activities. The loss of Dr. Agrawal s services would be detrimental to our ongoing scientific progress and the execution of our business plan.

We are a party to an employment agreement with Dr. Agrawal that expires on October 19, 2013, but automatically extends annually for an additional year. This agreement may be terminated by us or Dr. Agrawal for any reason or no reason at any time upon notice to the other party. We do not carry key man life insurance for Dr. Agrawal.

Furthermore, our future growth will require hiring a number of qualified technical and management personnel. Accordingly, recruiting and retaining such personnel in the future will be critical to our success. There is intense competition from other companies and research and academic institutions for qualified personnel in the areas of our activities. If we are not able to continue to attract and retain, on acceptable terms, the qualified personnel necessary for the continued development of our business, we may not be able to sustain our operations or growth.

Regulatory Risks

We may not be able to obtain marketing approval for products resulting from our development efforts.

All of the drug candidates that we are developing, or may develop in the future, will require additional research and development, extensive preclinical studies, nonclinical testing, clinical trials, and regulatory approval prior to any commercial sales. This process is lengthy, often taking a number of years, is uncertain, and is expensive. Since our inception, we have conducted clinical trials of a number of compounds. Currently, we have two candidates, IMO-2125 and IMO-3100, in clinical development. The FDA and other regulatory authorities may not approve any of our potential products for any indication.

We may need to address a number of technological challenges in order to complete development of our products. Moreover, these products may not be effective in treating any disease or may prove to have undesirable or unintended side effects, unintended alteration of the immune system over time, toxicities or other characteristics that may preclude our obtaining regulatory approval or prevent or limit commercial use. If we do not obtain necessary regulatory approvals, our business will be adversely affected.

We are subject to comprehensive regulatory requirements, which are costly and time consuming to comply with; if we fail to comply with these requirements, we could be subject to adverse consequences and penalties.

The testing, manufacturing, labeling, advertising, promotion, export, and marketing of our products are subject to extensive regulation by governmental authorities in Europe, the United States, and elsewhere throughout the world.

In general, submission of materials requesting permission to conduct clinical trials may not result in authorization by the FDA or any equivalent foreign regulatory agency to commence clinical trials. Further, permission to continue ongoing trials may be withdrawn by the FDA or other regulatory agencies at any time after initiation, based on new information available after the initial authorization to commence clinical trials or for other reasons. In addition, submission of an application for marketing approval to the relevant regulatory agency following completion of clinical

trials may not result in the regulatory agency approving the application if applicable regulatory criteria are not satisfied, and may result in the regulatory agency requiring additional testing or information.

Table of Contents

Even if we obtain regulatory approval for any of our product candidates, we will be subject to ongoing FDA obligations and regulatory oversight. Any regulatory approval of a product may contain limitations on the approved indicated uses for which the product may be marketed or requirements for costly post-marketing testing and surveillance to monitor the safety or efficacy of the product. Any product for which we obtain marketing approval, along with the facilities at which the product is manufactured, any post-approval clinical data, and any advertising and promotional activities for the product will be subject to continual review and periodic inspections by the FDA and other regulatory agencies.

Both before and after approval is obtained, failure to comply with regulatory requirements, or discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, may result in:

- the regulatory agency s delay in approving, or refusal to approve, an application for marketing of a product or a supplement to an approved application;
- restrictions on our products or the marketing or manufacturing of our products;
- withdrawal of our products from the market;
- warning letters;
- voluntary or mandatory product recalls;
- fines;
- suspension or withdrawal of regulatory approvals;
- product seizure or detention;
- refusal to permit the import or export of our products;
- injunctions or the imposition of civil penalties; and
- criminal penalties.

We have only limited experience in regulatory affairs and our products are based on new technologies; these factors may affect our ability or the time we require to obtain necessary regulatory approvals.

We have only limited experience in filing the applications necessary to obtain regulatory approvals. Moreover, the products that result from our research and development programs will likely be based on new technologies and new therapeutic approaches that have not been extensively tested in humans. The regulatory requirements governing these types of products may be more rigorous than for conventional drugs. As a result, we may experience a longer regulatory process in connection with obtaining regulatory approvals of any product that we develop.

Failure to obtain regulatory approval in jurisdictions outside the United States will prevent us from marketing our products abroad.

We intend to market our products, if approved, in markets outside the United States, which will require separate regulatory approvals and compliance with numerous and varying regulatory requirements. The approval procedures vary among such markets and may involve requirements for additional testing, and the time required to obtain

approval may differ from that required to obtain FDA approval. Approval by the FDA does not ensure approval by regulatory authorities in other countries or jurisdictions, and approval by one foreign regulatory authority does not ensure approval by regulatory authorities in other foreign countries or by the FDA. The foreign regulatory approval process may include all of the risks associated with obtaining FDA approval. We may not obtain foreign regulatory approvals on a timely basis, if at all.

Table of Contents

Risks Relating to Collaborators

We need to establish additional collaborative alliances in order to succeed.

We seek to advance some of our products through collaborative alliances with pharmaceutical companies. Collaborators provide the necessary resources and drug development experience to advance our compounds in their programs. Upfront payments and milestone payments received from collaborations help to provide us with the financial resources for our internal research and development programs. Our internal programs are focused on developing TLR-targeted drug candidates for the potential treatment of infectious diseases, autoimmune and inflammatory diseases, cancer, and respiratory diseases. We believe that additional resources will be required to advance compounds in all of these areas. If we do not reach agreements with additional collaborators in the future, our ability to advance our compounds will be jeopardized and we may fail to meet our business objectives. If we cannot enter into additional collaboration agreements, we may not be able to obtain the expertise and resources necessary to achieve our business objectives. We face, and will continue to face, significant competition in seeking appropriate collaborators. Moreover, collaborations are complex and time consuming to negotiate, document, and implement. We may not be successful in our efforts to establish and implement collaborations or other alternative arrangements. The terms of any collaborations or other arrangements that we establish, if any, may not be favorable to us.

Our existing collaborations and any collaborations we enter into in the future may not be successful.

An important element of our business strategy includes entering into collaborative alliances with corporate collaborators, primarily large pharmaceutical companies, for the development, commercialization, marketing, and distribution of some of our drug candidates. In December 2007, we entered into an exclusive, worldwide license agreement with Merck KGaA to research, develop, and commercialize products containing our TLR9 agonists for treatment of cancer, excluding cancer vaccines. In December 2006, we entered into an exclusive license and research collaboration with Merck to research, develop, and commercialize vaccine products containing our TLR7, 8, and 9 agonists in the fields of cancer, infectious diseases, and Alzheimer s disease.

Any collaboration that we enter into may not be successful. The success of our collaborative alliances, if any, will depend heavily on the efforts and activities of our collaborators. Our existing collaborations and any potential future collaborations have risks, including the following:

- our collaborators may control the development of the drug candidates being developed with our technologies and compounds including the timing of development;
- our collaborators may control the public release of information regarding the developments, and we may not be able to make announcements or data presentations on a schedule favorable to us;
- disputes may arise in the future with respect to the ownership of rights to technology developed with our collaborators;
- disagreements with our collaborators could delay or terminate the research, development or commercialization of products, or result in litigation or arbitration;
- we may have difficulty enforcing the contracts if any of our collaborators fail to perform;
- our collaborators may terminate their collaborations with us, which could make it difficult for us to attract new collaborators or adversely affect the perception of us in the business or financial communities;

our collaboration agreements are likely to be for fixed terms and subject to termination by our collaborators in the event of a material breach or lack of scientific progress by us;

our collaborators may have the first right to maintain or defend our intellectual property rights and, although we would likely have the right to assume the maintenance and defense of our intellectual property rights if our collaborators do not, our ability to do so may be compromised by our collaborators acts or omissions;

Table of Contents

our collaborators may challenge our intellectual property rights or utilize our intellectual property rights in such a way as to invite litigation that could jeopardize or invalidate our intellectual property rights or expose us to potential liability;

our collaborators may not comply with all applicable regulatory requirements, or may fail to report safety data in accordance with all applicable regulatory requirements;

our collaborators may change the focus of their development and commercialization efforts. Pharmaceutical and biotechnology companies historically have re-evaluated their priorities following mergers and consolidations, which have been common in recent years in these industries. For example, we have a strategic partnership with Merck, which merged with Schering-Plough, which has been involved with certain TLR-targeted research and development programs. Although the merger has not affected our partnership with Merck to date, management of the combined company could determine to reduce the efforts and resources that the combined company will apply to its strategic partnership with us or terminate the strategic partnership. The ability of our products to reach their potential could be limited if our collaborators decrease or fail to increase spending relating to such products;

our collaborators may under fund or not commit sufficient resources to the testing, marketing, distribution or development of our products; and

our collaborators may develop alternative products either on their own or in collaboration with others, or encounter conflicts of interest or changes in business strategy or other business issues, which could adversely affect their willingness or ability to fulfill their obligations to us.

Given these risks, it is possible that any collaborative alliance into which we enter may not be successful. Collaborations with pharmaceutical companies and other third parties often are terminated or allowed to expire by the other party. For example, effective as of February 2010, Novartis International Pharmaceutical, Ltd. terminated the research collaboration and option agreement that we entered into with it in May 2005. Merck may terminate its license and research collaboration agreement by giving us 90 days advance notice. Merck KGaA may terminate its license agreement with us at its convenience by giving us 90 days advance notice. The termination or expiration of either of these agreements or any other collaboration agreement that we enter into in the future may adversely affect us financially and could harm our business reputation.

Risks Relating to Intellectual Property

If we are unable to obtain patent protection for our discoveries, the value of our technology and products will be adversely affected.

Our patent positions, and those of other drug discovery companies, are generally uncertain and involve complex legal, scientific, and factual questions. Our ability to develop and commercialize drugs depends in significant part on our ability to:

obtain patents;

obtain licenses to the proprietary rights of others on commercially reasonable terms;

operate without infringing upon the proprietary rights of others;

prevent others from infringing on our proprietary rights; and

protect our trade secrets.

We do not know whether any of our patent applications or those patent applications that we license will result in the issuance of any patents. Our issued patents and those that may be issued in the future, or those licensed to us, may be challenged, invalidated or circumvented, and the rights granted thereunder may not provide us proprietary protection or competitive advantages against competitors with similar technology. Moreover, intellectual property laws may change and negatively impact our ability to obtain issued patents covering our technologies or to enforce any patents that issue. Because of the extensive time required for development, testing, and regulatory review of a

Table of Contents

potential product, it is possible that, before any of our products can be commercialized, any related patent may expire or remain in force for only a short period following commercialization, thus reducing any advantage provided by the patent.

Because patent applications in the United States and many foreign jurisdictions are typically not published until 18 months after filing, or in some cases not at all, and because publications of discoveries in the scientific literature often lag behind actual discoveries, neither we nor our licensors can be certain that we or they were the first to make the inventions claimed in issued patents or pending patent applications, or that we or they were the first to file for protection of the inventions set forth in these patent applications.

As of March 1, 2011, we owned 73 U.S. patents and U.S. patent applications and 230 corresponding patents and patent applications throughout the rest of the world for our TLR-targeted immune modulation technologies. These patents and patent applications include novel chemical compositions of matter and methods of use of our IMO compounds, including IMO-2125, IMO-3100 and IMO-2055. With respect to IMO-2125, we have issued patents that cover the chemical composition of matter of IMO-2125 and methods of its use, with the earliest composition claims expiring in 2026. With respect to IMO-3100, we have patent applications that cover the chemical composition of matter of IMO-3100 and methods of its use that, if issued, would expire at the earliest in 2026. With respect to IMO-2055, we have issued patents that cover the chemical composition of matter of IMO-2055 and methods of its use, including in combination with marketed cancer products, with the earliest composition claims expiring in 2023. With respect to IMO-4200, we have patent applications that cover the chemical composition of matter of IMO-4200 and methods of its use that, if issued, would expire at the earliest in 2027.

As of March 1, 2011, we own two U.S. patent applications and one worldwide patent application for our GSO compounds and methods of their use. Patents issuing from these patent applications, if any, would expire at the earliest in 2030.

In addition to our TLR-targeted and GSO patent portfolios, we are the owner or hold licenses of patents and patent applications related to antisense technology. As of March 1, 2011, our antisense patent portfolio included 101 U.S. patents and patent applications and 124 patents and patent applications throughout the rest of the world. These antisense patents and patent applications include novel compositions of matter, the use of these compositions for various genes, sequences and therapeutic targets, and oral and other routes of administration. Some of the patents and patent applications in our antisense portfolio were in-licensed. These patents expire at various dates ranging from 2014 to 2022.

Third parties may own or control patents or patent applications and require us to seek licenses, which could increase our development and commercialization costs, or prevent us from developing or marketing products.

Although we have many issued patents and pending patent applications in the United States and other countries, we may not have rights under certain third party patents or patent applications related to our products. Third parties may own or control these patents and patent applications in the United States and abroad. In particular, we are aware of third party United States patents that contain broad claims related to the use of certain oligonucleotides for stimulating an immune response, although we do not believe that these claims are valid. In addition, there may be other patents and patent applications related to our products of which we are not aware. Therefore, in some cases, in order to develop, manufacture, sell or import some of our products, we or our collaborators may choose to seek, or be required to seek, licenses under third-party patents issued in the United States and abroad or under third party patents that might issue from United States and foreign patent applications. In such an event, we would be required to pay license fees or royalties or both to the licensor. If licenses are not available to us on acceptable terms, we or our collaborators may not be able to develop, manufacture, sell or import these products.

Table of Contents

We may lose our rights to patents, patent applications or technologies of third parties if our licenses from these third parties are terminated. In such an event, we might not be able to develop or commercialize products covered by the licenses.

Currently, we have not in-licensed any patents or patent applications related to our TLR-targeted drug candidate programs or our GSO compounds and methods of their use. However, we are party to seven royalty-bearing license agreements under which we have acquired rights to patents, patent applications, and technology of third parties in the field of antisense technology, which may be applicable to our TLR antisense. Under these licenses we are obligated to pay royalties on net sales by us of products or processes covered by a valid claim of a patent or patent application licensed to us. We also are required in some cases to pay a specified percentage of any sublicense income that we may receive. These licenses impose various commercialization, sublicensing, insurance, and other obligations on us.

Our failure to comply with these requirements could result in termination of the licenses. These licenses generally will otherwise remain in effect until the expiration of all valid claims of the patents covered by such licenses or upon earlier termination by the parties. The issued patents covered by these licenses expire at various dates ranging from 2014 to 2022. If one or more of these licenses is terminated, we may be delayed in our efforts, or be unable, to develop and market the products that are covered by the applicable license or licenses.

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

There has been substantial litigation and other proceedings regarding patent and other intellectual property rights in the biotechnology industry. We may become a party to various types of patent litigation or other proceedings regarding intellectual property rights from time to time even under circumstances where we are not practicing and do not intend to practice any of the intellectual property involved in the proceedings. For instance, in 2002, 2003, and 2005, we became involved in interference proceedings declared by the USPTO for some of our antisense and ribozyme patents. All of these interferences have since been resolved. We are neither practicing nor intending to practice the intellectual property that is associated with any of these interference proceedings.

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

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

Risks Relating to Product Manufacturing, Marketing and Sales, and Reliance on Third Parties

Because we have limited manufacturing experience, and no manufacturing facilities or infrastructure, we are dependent on third-party manufacturers to manufacture drug candidates for us. If we cannot rely on third-party manufacturers, we will be required to incur significant costs and devote significant efforts to establish our own manufacturing facilities and capabilities.

We have limited manufacturing experience and no manufacturing facilities, infrastructure or clinical or commercial scale manufacturing capabilities. In order to continue to develop our drug candidates, apply for regulatory approvals, and ultimately commercialize products, we need to develop, contract for or otherwise arrange for the necessary manufacturing capabilities.

We currently rely upon third parties to produce material for nonclinical and clinical testing purposes and expect to continue to do so in the future. We also expect to rely upon third parties to produce materials that may be

Table of Contents

required for the commercial production of our products. Our current and anticipated future dependence upon others for the manufacture of our drug candidates may adversely affect our future profit margins and our ability to develop drug candidates and commercialize any drug candidates on a timely and competitive basis. We currently do not have any long term supply contracts.

There are a limited number of manufacturers that operate under the FDA s current Good Manufacturing Practices, or cGMP, regulations capable of manufacturing our drug candidates. As a result, we may have difficulty finding manufacturers for our products with adequate capacity for our needs. If we are unable to arrange for third-party manufacturing of our drug candidates on a timely basis, or to do so on commercially reasonable terms, we may not be able to complete development of our drug candidates or market them.

Reliance on third-party manufacturers entails risks to which we would not be subject if we manufactured drug candidates ourselves, including:

- reliance on the third party for regulatory compliance and quality assurance;
- the possibility of breach of the manufacturing agreement by the third party because of factors beyond our control;
- the possibility of termination or nonrenewal of the agreement by the third party, based on its own business priorities, at a time that is costly or inconvenient for us;
- the potential that third-party manufacturers will develop know-how owned by such third party in connection with the production of our drug candidates that becomes necessary for the manufacture of our drug candidates; and
- reliance upon third-party manufacturers to assist us in preventing inadvertent disclosure or theft of our proprietary knowledge.

Any contract manufacturers with which we enter into manufacturing arrangements will be subject to ongoing periodic, unannounced inspections by the FDA, or foreign equivalent, and corresponding state and foreign agencies or their designees to ensure compliance with cGMP requirements and other governmental regulations and corresponding foreign standards. One of our contract manufacturers notified us that it had received a GMP warning letter from the FDA in February 2011. Any failure by our third-party manufacturers to comply with such requirements, regulations or standards could lead to a delay in the conduct of our clinical trials, or a delay in, or failure to obtain, regulatory approval of any of our drug candidates. Such failure could also result in sanctions being imposed, including fines, injunctions, civil penalties, delays, suspension or withdrawal of approvals, product seizures or recalls, imposition of operating restrictions, total or partial suspension of production or distribution, or criminal prosecution.

Additionally, contract manufacturers may not be able to manufacture our drug candidates at a cost or in quantities necessary to make them commercially viable. To date, our third-party manufacturers have met our manufacturing requirements, but we cannot be assured that they will continue to do so. Furthermore, changes in the manufacturing process or procedure, including a change in the location where the drug substance or drug product is manufactured or a change of a third-party manufacturer, may require prior FDA review and approval in accordance with the FDA s cGMP and NDA/BLA regulations. Contract manufacturers may also be subject to comparable foreign requirements. This review may be costly and time-consuming and could delay or prevent the launch of a drug candidate. The FDA or similar foreign regulatory agencies at any time may also implement new standards, or change their interpretation and enforcement of existing standards for manufacture, packaging or testing of products. If we or our contract manufacturers are unable to comply, we or they may be subject to regulatory action, civil actions or penalties.

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

If we receive regulatory approval to commence commercial sales of any of our drug candidates, we will face competition with respect to commercial sales, marketing, and distribution. These are areas in which we have no experience. To market any of our drug candidates directly, we would need to develop a marketing and sales force with technical expertise and with supporting distribution capability. In particular, we would need to recruit a large

Table of Contents

number of experienced marketing and sales personnel. Alternatively, we could engage a pharmaceutical or other healthcare company with an existing distribution system and direct sales force to assist us. However, to the extent we entered into such arrangements, we would be dependent on the efforts of third parties. If we are unable to establish sales and distribution capabilities, whether internally or in reliance on third parties, our business would suffer materially.

If third parties on whom we rely for clinical trials do not perform as contractually required or as we expect, we may not be able to obtain regulatory approval for or commercialize our products and our business may suffer.

We do not have the ability to independently conduct the clinical trials required to obtain regulatory approval for our drug candidates. We depend on independent clinical investigators, contract research organizations and other third-party service providers in the conduct of the clinical trials of our drug candidates and expect to continue to do so. We contracted with contract research organizations to manage our recently completed Phase 1 clinical trials of IMO-2125 in patients with chronic HCV infection and our Phase 1 clinical trials of IMO-3100 in healthy subjects and expect to contract with such organizations for future clinical trials. We rely heavily on these parties for successful execution of our clinical trials, but do not control many aspects of their activities. We are responsible for ensuring that each of our clinical trials is conducted in accordance with the general investigational plan and protocols for the trial. Moreover, the FDA and foreign regulatory agencies require us to comply with certain standards, commonly referred to as good clinical practices, and applicable regulatory requirements, for conducting, recording, and reporting the results of clinical trials to assure that data and reported results are credible and accurate and that the rights, integrity, and confidentiality of clinical trial participants are protected. Our reliance on third parties that we do not control does not relieve us of these responsibilities and requirements. Third parties may not complete activities on schedule, or at all, or may not conduct our clinical trials in accordance with regulatory requirements or our stated protocols. The failure of these third parties to carry out their obligations could delay or prevent the development, approval, and commercialization of our drug candidates. If we seek to conduct any of these activities ourselves in the future, we will need to recruit appropriately trained personnel and add to our infrastructure.

The commercial success of any drug candidates that we may develop will depend upon the degree of market acceptance by physicians, patients, third-party payors, and others in the medical community.

Any products that we ultimately bring to the market, if they receive marketing approval, may not gain market acceptance by physicians, patients, third-party payors or others in the medical community. If these products do not achieve an adequate level of acceptance, we may not generate significant product revenue and we may not become profitable. The degree of market acceptance of our drug candidates, if approved for commercial sale, will depend on a number of factors, including:

- the prevalence and severity of any side effects, including any limitations or warnings contained in the product s approved labeling;
- the efficacy and potential advantages over alternative treatments;
- the ability to offer our drug candidates for sale at competitive prices;
- relative convenience and ease of administration;
- the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;

the strength of marketing and distribution support and the timing of market introduction of competitive products; and

publicity concerning our products or competing products and treatments.

Even if a potential product displays a favorable efficacy and safety profile, market acceptance of the product will not be known until after it is launched. Our efforts to educate patients, the medical community, and third-party payors on the benefits of our drug candidates may require significant resources and may never be successful. Such

Table of Contents

efforts to educate the marketplace may require more resources than are required by conventional technologies marketed by our competitors.

If we are unable to obtain adequate reimbursement from third-party payors for any products that we may develop or acceptable prices for those products, our revenues and prospects for profitability will suffer.

Most patients rely on Medicare, Medicaid, private health insurers, and other third-party payors to pay for their medical needs, including any drugs we may market. If third-party payors do not provide adequate coverage or reimbursement for any products that we may develop, our revenues and prospects for profitability will suffer. Congress enacted a limited prescription drug benefit for Medicare recipients in the Medicare Prescription Drug, Improvement, and Modernization Act of 2003. While the program established by this statute may increase demand for our products if we were to participate in this program, our prices will be negotiated with drug procurement organizations for Medicare beneficiaries and are likely to be lower than we might otherwise obtain. Non-Medicare third-party drug procurement organizations may also base the price they are willing to pay on the rate paid by drug procurement organizations for Medicare beneficiaries.

A primary trend in the United States healthcare industry is toward cost containment. In addition, in some foreign countries, particularly the countries of the European Union, the pricing of prescription pharmaceuticals is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take six months or longer after the receipt of regulatory marketing approval for a product. To obtain reimbursement or pricing approval in some countries, we may be required to conduct a clinical trial that compares the cost effectiveness of our drug candidates or products to other available therapies. The conduct of such a clinical trial could be expensive and result in delays in commercialization of our products. These further clinical trials would require additional time, resources and expenses. If reimbursement of our products is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, our prospects for generating revenue, if any, could be adversely affected and our business may suffer.

In March 2010, the U.S. Congress passed and President Obama signed into law the Patient Protection and Affordable Care Act and the Health Care and Education Reconciliation Act. These health care reform laws are intended to broaden access to health insurance; reduce or constrain the growth of health care spending, especially Medicare spending; enhance remedies against fraud and abuse; add new transparency requirements for health care and health insurance industries; impose new taxes and fees on certain sectors of the health industry; and impose additional health policy reforms. Among the new fees is an annual assessment beginning in 2011 on makers of branded pharmaceuticals and biologics, under which a company s assessment is based primarily on its share of branded drug sales to federal health care programs. Such fees could affect our future profitability. Although it is too early to determine the effect of the new health care legislation on our future profitability and financial condition, the new law appears likely to continue the pressure on pharmaceutical pricing, especially under the Medicare program, and may also increase our regulatory burdens and operating costs.

Third-party payors are challenging the prices charged for medical products and services, and many third-party payors limit reimbursement for newly-approved health care products. These third-party payors may base their coverage and reimbursement on the coverage and reimbursement rate paid by carriers for Medicare beneficiaries. Furthermore, many such payors are investigating or implementing methods for reducing health care costs, such as the establishment of capitated or prospective payment systems. Cost containment pressures have led to an increased emphasis on the use of cost-effective products by health care providers. In particular, third-party payors may limit the indications for which they will reimburse patients who use any products that we may develop. Cost control initiatives could decrease the price we might establish for products that we or our current or future collaborators may develop or sell, which would result in lower product revenues or royalties payable to us.

We face a risk of product liability claims and may not be able to obtain insurance.

Our business exposes us to the risk of product liability claims that is inherent in the manufacturing, testing, and marketing of human therapeutic drugs. We face an inherent risk of product liability exposure related to the testing of

Table of Contents

our drug candidates in human clinical trials and will face an even greater risk if we commercially sell any products. Regardless of merit or eventual outcome, liability claims and product recalls may result in:

- decreased demand for our drug candidates and products;
- damage to our reputation;
- regulatory investigations that could require costly recalls or product modifications;
- withdrawal of clinical trial participants;
- costs to defend related litigation;
- substantial monetary awards to clinical trial participants or patients, including awards that substantially exceed our product liability insurance, which we would then have to pay using other sources, if available, and would damage our ability to obtain liability insurance at reasonable costs, or at all, in the future;
- loss of revenue;
- the diversion of management s attention away from managing our business; and
- the inability to commercialize any products that we may develop.

Although we have product liability and clinical trial liability insurance that we believe is adequate, this insurance is subject to deductibles and coverage limitations. We may not be able to obtain or maintain adequate protection against potential liabilities. If we are unable to obtain insurance at acceptable cost or otherwise protect against potential product liability claims, we will be exposed to significant liabilities, which may materially and adversely affect our business and financial position. These liabilities could prevent or interfere with our commercialization efforts.

Risks Relating to an Investment in Our Common Stock

Our corporate governance structure, including provisions in our certificate of incorporation and by-laws, our stockholder rights plan and Delaware law, may prevent a change in control or management that stockholders may consider desirable.

Section 203 of the Delaware General Corporation Law and our certificate of incorporation, by-laws, and stockholder rights plan contain provisions that might enable our management to resist a takeover of our company or discourage a third party from attempting to take over our company. These provisions include:

- a classified board of directors;
- limitations on the removal of directors;
- limitations on stockholder proposals at meetings of stockholders;
- the inability of stockholders to act by written consent or to call special meetings; and
- the ability of our board of directors to designate the terms of and issue new series of preferred stock without stockholder approval.

In addition, Section 203 of the Delaware General Corporation Law imposes restrictions on our ability to engage in business combinations and other specified transactions with significant stockholders. These provisions could have the effect of delaying, deferring or preventing a change in control of us or a change in our management that stockholders may consider favorable or beneficial. These provisions could also discourage proxy contests and make it more difficult for you and other stockholders to elect directors and take other corporate actions. These provisions could also limit the price that investors might be willing to pay in the future for shares of our common stock.

Table of Contents

Our stock price has been and may in the future be extremely volatile. In addition, because an active trading market for our common stock has not developed, our investors ability to trade our common stock may be limited. As a result, investors may lose all or a significant portion of their investment.

Our stock price has been volatile. During the period from January 1, 2009 to March 1, 2011, the closing sales price of our common stock ranged from a high of $9.06 per share to a low of $2.36 per share. The stock market has also experienced significant price and volume fluctuations, particularly within the past three years, and the market prices of biotechnology companies in particular have been highly volatile, often for reasons that have been unrelated to the operating performance of particular companies. The market price for our common stock may be influenced by many factors, including:

- timing and results of clinical trials of our drug candidates or those of our competitors;
- the regulatory status of our drug candidates;
- failure of any of our drug candidates, if approved, to achieve commercial success;
- the success of competitive products or technologies;
- regulatory developments in the United States and foreign countries;
- our success in entering into collaborative agreements;
- developments or disputes concerning patents or other proprietary rights;
- the departure of key personnel;
- variations in our financial results or those of companies that are perceived to be similar to us;
- our cash resources;
- the terms of any financing conducted by us;
- changes in the structure of healthcare payment systems;
- market conditions in the pharmaceutical and biotechnology sectors and issuance of new or changed securities analysts reports or recommendations; and
- general economic, industry, and market conditions.

In addition, our common stock has historically been traded at low volume levels and may continue to trade at low volume levels. As a result, any large purchase or sale of our common stock could have a significant impact on the price of our common stock and it may be difficult for investors to sell our common stock in the market without depressing the market price for the common stock or at all.

As a result of the foregoing, investors may not be able to resell their shares at or above the price they paid for such shares. Investors in our common stock must be willing to bear the risk of fluctuations in the price of our common stock and the risk that the value of their investment in our stock could decline.

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

None.

Item 2. ***Properties.***

We lease approximately 26,000 square feet of laboratory and office space located in Cambridge, Massachusetts. The lease expires on May 31, 2014, subject to a five-year renewal option exercisable by us. We have specified rights to sublease this facility.

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

None.

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.***

Market Information

Our common stock is listed on the NASDAQ Global Market under the symbol IDRA.

The following table sets forth, for the periods indicated, the high and low sales prices per share of our common stock during each of the quarters set forth below as reported on the NASDAQ Global Market. These prices reflect inter-dealer prices without retail mark-up, mark-down or commission and may not necessarily represent actual transactions.

	High	Low
2009		
First Quarter	$ 9.19	$ 4.50
Second Quarter	7.46	5.02
Third Quarter	8.11	5.20
Fourth Quarter	8.50	4.48
2010		
First Quarter	$ 6.33	$ 4.50
Second Quarter	7.32	3.02
Third Quarter	3.88	3.08
Fourth Quarter	3.54	2.35

As of January 31, 2011, we had approximately 140 common stockholders of record registered on the books of the Company, excluding shares held through banks and brokers.

Dividends

We have never declared or paid cash dividends on our common stock, and we do not expect to pay any cash dividends on our common stock in the foreseeable future.

Table of Contents

Comparative Stock Performance

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 of 1933 or Securities Exchange Act of 1934, each as amended, except to the extent that we specifically incorporate it by reference into such filing.

On December 10, 2007, the Company s common stock began trading on the NASDAQ Global Stock Market under the ticker symbol IDRA. Prior to December 10, 2007, the Company s common stock was quoted on the American Stock Exchange under the ticker symbol IDP.

The comparative stock performance graph shown below compares cumulative stockholder return on the Company s common stock from December 31, 2005 through December 31, 2010 with the cumulative total return of the NASDAQ Biotechnology Index and the Russell 2000 Index. This graph assumes an investment of $100 on December 31, 2005 in the Company s common stock and in each of the indices and assumes that dividends are reinvested.

COMPARISON OF 5 YEAR CUMULATIVE TOTAL RETURN

	12/31/05	12/31/06	12/31/07	12/31/08	12/31/09	12/31/10
IDERA PHARMACEUTICALS, INC.	**100.00**	**110.45**	**268.44**	**157.38**	**105.94**	**59.22**
NASDAQ BIOTECHNOLOGY INDEX	**100.00**	**99.71**	**103.09**	**96.34**	**106.49**	**114.80**
RUSSELL 2000 INDEX	**100.00**	**118.37**	**116.51**	**77.15**	**98.11**	**124.46**

Table of Contents

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

The following selected financial data are derived from our financial statements. The data should be read in conjunction with Management s Discussion and Analysis of Financial Condition and Results of Operations and the financial statements, related notes, and other financial information included herein.

	Year Ended December 31,				
	2010	2009	2008	2007	2006
	(In thousands, except per share data)				
Statement of Operations Data:					
Alliance revenue	$ 16,110	$ 34,518	$ 26,450	$ 8,124	$ 2,425
Operating expenses:					
Research and development	24,226	18,570	16,152	13,195	12,705
General and administrative	9,867	8,561	9,798	9,656	6,280
Total operating expenses	34,093	27,131	25,950	22,851	18,985
(Loss) income from operations	(17,983)	7,387	500	(14,727)	(16,560)
Other income (expense):					
Investment income, net	116	145	1,344	1,668	505
Interest expense	(2)	(3)	(92)	(149)	(425)
Foreign currency exchange loss	(94)	(27)	(267)		
(Loss) income before income taxes	(17,963)	7,502	1,485	(13,208)	(16,480)
Income tax benefit (provision)		44	24		(45)
Net (loss) income	$ (17,963)	$ 7,546	$ 1,509	$ (13,208)	$ (16,525)
Basic net (loss) income per share	$ (0.71)	$ 0.32	$ 0.07	$ (0.62)	$ (0.99)
Diluted net (loss) income per share	$ (0.71)	$ 0.31	$ 0.06	$ (0.62)	$ (0.99)
Shares used in computing basic net (loss) income per common share(1)	25,139	23,420	22,655	21,221	16,625
Shares used in computing diluted net (loss) income per common share(1)	25,139	24,079	25,331	21,221	16,625
Balance Sheet Data:					
Cash, cash equivalents and investments	$ 34,643	$ 40,207	$ 55,606	$ 23,743	$ 38,187
Working capital	32,100	23,054	32,099	15,908	30,984
Total assets	36,881	47,639	59,400	27,714	40,541
Capital lease obligations	8	28	49	70	10
Note payable				1,143	
4% convertible subordinated notes payable					5,033

Accumulated deficit	(351,642)	(333,679)	(341,225)	(342,734)	(329,526)
Total stockholders equity	33,101	33,105	22,167	7,719	12,237

(1) Computed on the basis described in Note 13 of notes to financial statements appearing elsewhere in this Annual Report on Form 10-K.

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

Overview

We are engaged in the discovery and development of DNA- and RNA-based drug candidates targeted to Toll-Like Receptors, or TLRs, to treat infectious diseases, autoimmune and inflammatory diseases, cancer, and respiratory diseases, and for use as vaccine adjuvants. Drug candidates are compounds that we are developing and that have not been approved for any commercial use. TLRs are specific receptors present in immune system cells that recognize the DNA or RNA of bacteria or viruses and initiate an immune response. Relying on our expertise in DNA and RNA chemistry, we have designed and created proprietary TLR agonists and antagonists to modulate immune responses. A TLR agonist is a compound that stimulates an immune response through the targeted TLR. A TLR antagonist is a compound that blocks activation of an immune response through the targeted TLR.

Our business strategy is to advance applications of our TLR-targeted drug candidates in multiple disease areas simultaneously. We are advancing some of these applications through internal programs, and we seek to advance

Table of Contents

other applications through collaborative alliances with pharmaceutical companies. Collaborators provide the necessary resources and drug development experience to advance our compounds in their programs. Upfront payments and milestone payments received from collaborations help to provide us with the financial resources for our internal research and development programs.

Our internal programs are focused on developing TLR-targeted drug candidates for the potential treatment of infectious diseases, autoimmune and inflammatory diseases, cancer, and respiratory diseases, and for use as vaccine adjuvants. We have completed two Phase 1 clinical trials of IMO-2125, a TLR9 agonist, in patients with chronic hepatitis C virus, or HCV, infection and intend to initiate enrollment in a 12-week Phase 2 randomized clinical trial of IMO-2125 plus ribavirin in treatment-naïve HCV patients in the second quarter of 2011. We have completed two Phase 1 clinical trials of IMO-3100, an antagonist of TLR7 and TLR9, in healthy subjects and we expect to complete ongoing nonclinical studies of IMO-3100 during the first half of 2011 and intend to submit to the FDA a protocol for a Phase 2 clinical trial of IMO-3100 in a selected disease indication during the third quarter of 2011.

In addition to our internal programs, we currently are collaborating with two pharmaceutical companies to advance other applications of our TLR-targeted compounds. We are collaborating with Merck KGaA for the use of TLR9 agonists in cancer treatment, excluding cancer vaccines. Merck KGaA is conducting one Phase 2 clinical trial and three Phase 1b clinical trials of IMO-2055, which Merck KGaA refers to as EMD 1201081, in combination with other cancer therapy agents in several cancer indications. We also are collaborating with Merck Sharpe & Dohme Corp., or Merck, for the use of TLR7, TLR8, and TLR9 agonists as vaccine adjuvants in the fields of cancer, infectious diseases, and Alzheimer s disease. Merck KGaA and Merck are not related.

At December 31, 2010, we had an accumulated deficit of $351.6 million. We expect to incur substantial operating losses in future periods. We do not expect to generate significant funds or product revenue until we successfully complete development and obtain marketing approval for drug candidates, either alone or in collaborations with third parties, which we expect will take a number of years. In order to commercialize our drug candidates, we need to address a number of technological challenges and to comply with comprehensive regulatory requirements.

Critical Accounting Policies and Estimates

This management s discussion and analysis of financial condition and results of operations is based on our financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. On an ongoing basis, management evaluates its estimates and judgments, including those related to revenue recognition and stock-based compensation. Management bases its estimates and judgments on historical experience and on various other factors that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

We regard an accounting estimate or assumption underlying our financial statements as a critical accounting estimate where:

- the nature of the estimate or assumption is material due to the level of subjectivity and judgment necessary to account for highly uncertain matters or the susceptibility of such matters to change; and

- the impact of the estimates and assumptions on financial condition or operating performance is material.

Our significant accounting policies are described in Note 2 of the notes to our financial statements appearing elsewhere in this Annual Report on Form 10-K. Not all of these significant policies, however, fit the definition of critical accounting policies and estimates. We believe that our accounting policies relating to revenue recognition and stock-based compensation fit the description of critical accounting estimates and judgments.

Table of Contents

Revenue Recognition

Our corporate strategy includes entering into collaborative license and development agreements with pharmaceutical companies for the development and commercialization of our product candidates. The terms of our agreements have included non-refundable license fees, funding of research and development, payments based upon achievement of clinical and preclinical development milestones and royalties on product sales.

Our policy for recognizing revenue requires that four basic criteria are met before we can recognize revenue:

persuasive evidence of an arrangement exists;

delivery has occurred, services have been rendered or obligations have been satisfied;

the fee is fixed or determinable; and

collectability is reasonably assured.

Determination of the last three criteria are based on management s judgments regarding the fixed nature of the fee charged for services rendered or products delivered and the collectability of these fees. Should changes in conditions cause management to determine these criteria are not met for any future transactions, revenues recognized for any reporting period could be adversely affected.

When evaluating multiple element arrangements, we consider whether the components of the arrangement represent separate units of accounting.

We recognize revenue from non-refundable upfront fees received under collaboration agreements, not specifically tied to a separate earnings process, ratably over the term of our contractual obligation or our estimated continuing involvement under the research arrangement. If the estimated period of continuing involvement is subsequently modified, we will modify the period over which the upfront fee is recognized, accordingly, on a prospective basis.

We recognize revenue from reimbursements earned in connection with our research and development collaboration agreements as related research and development costs are incurred, and our contractual services are performed, provided collectability is reasonably assured. We include amounts contractually owed us under these research and development collaboration agreements, including any earned but unbilled receivables, in trade accounts receivable in our balance sheets. Our principal costs under these agreements are generally for our personnel and related expenses of conducting research and development, as well as for research and development performed by outside contractors or consultants or related research and development materials provided by third parties or for clinical trials we conduct on behalf of a collaborator.

For payments that are specifically associated with a separate earnings process, we recognize revenue when the specific performance obligation is completed. Performance obligations typically consist of significant milestones in the development life cycle of the related technology, such as initiating clinical trials, filing for approval with regulatory agencies and obtaining approvals from regulatory agencies. We recognize revenue from milestone payments received under collaboration agreements when earned, provided that the milestone event is substantive, its achievability was not reasonably assured at the inception of the agreement, we have no further performance obligations relating to the event and collectability is reasonably assured. In the event that the agreement provides for payment to be made subsequent to our standard payment terms, we recognize revenue when payment becomes due.

Amounts received prior to satisfying the above revenue recognition criteria are recorded as deferred revenue in our balance sheets. We classify amounts that we expect to recognize in the next twelve months as short-term deferred revenue. We classify amounts that we do not expect to recognize within the next twelve months as long-term deferred revenue.

Although we follow detailed guidelines in measuring revenue, certain judgments affect the application of our revenue policy. For example, in connection with our existing collaboration agreements, we classify any deferred revenue recorded on our balance sheets as short-term and long-term deferred revenue based on our best estimate of when such revenue will be recognized. However, these estimates are based on our collaboration agreements and our

Table of Contents

then current operating plan and, if either should change, we may recognize a different amount of deferred revenue over the subsequent twelve-month period.

Our estimates of deferred revenue also reflect management s estimate of the periods of our involvement in our collaborations and the estimated periods over which our performance obligations will be completed. In some instances, the timing of satisfying these obligations can be difficult to estimate. Accordingly, our estimates may change in subsequent periods. Such changes to estimates would result in a change in revenue recognition amounts. If these estimates and judgments change over the course of these agreements, it may affect the timing and amount of revenue that we recognize and record in subsequent periods.

Stock-Based Compensation

We recognize all share-based payments to employees as expense in our financial statements based on their fair values. We record compensation expense over an award s vesting period based on the award s fair value at the date of grant. Our policy is to charge the fair value of stock options as an expense on a straight-line basis over the vesting period. We are also required to record compensation cost for the non-vested portion of stock-based awards granted prior to January 1, 2006, when we adopted Accounting Standards Codification, or ASC, 718 Stock Compensation , over the requisite service periods for the individual awards based on the estimated fair value adjusted for forfeitures.

We use the Black-Scholes option pricing model to estimate the fair value of stock option grants. The Black-Scholes model relies on a number of key assumptions to calculate estimated fair values, including assumptions as to average risk-free interest rate, expected dividend yield, expected life and expected volatility. For the assumed risk-free interest rate, we use the U.S. Treasury security rate with a term equal to the expected life of the option. Our assumed dividend yield of zero is based on the fact that we have never paid cash dividends to common stockholders and have no present intention to pay cash dividends. For options granted during 2007 and 2006, we use an expected option life (1) based on the average of the option term and the option vesting period for standard options and (2) based on actual experience of options held by employees holding options with similar characteristics for those options that do not meet the criteria for using the simplified method. For options granted after December 31, 2007, we use an expected option life based on actual experience. Our assumption for expected volatility is based on the actual stock-price volatility over a period equal to the expected life of the option.

If factors change and we employ different assumptions for estimating stock-based compensation expense in future periods, or if we decide to use a different valuation model, the stock-based compensation expense we recognize in future periods may differ significantly from what we have recorded in the current period and could materially affect our operating income (loss), net income (loss) and earnings (loss) per share. It may also result in a lack of comparability with other companies that use different models, methods and assumptions. The Black-Scholes option pricing model was developed for use in estimating the fair value of traded options that have no vesting restrictions and are fully transferable. These characteristics are not present in our option grants. Although the Black-Scholes option pricing model is widely used, existing valuation models, including the Black-Scholes valuation model, may not provide reliable measures of the fair values of our stock-based compensation.

We included charges of $3,684,000, $3,093,000, and $2,628,000 in our statements of operations for the years ended December 31, 2010, 2009 and 2008, respectively, representing the stock compensation expense attributable to share-based payments made to employees and directors. The increase in stock compensation expense for 2010, as compared to 2009, was primarily due to the inclusion of a full year s amortization of the $2,892,000 fair value of options to purchase an aggregate of 972,000 shares granted in December 2009 in the 2010 period as compared to the 2009 period which reflected less than one month s amortization of those options. The modification of stock options during 2010 in connection with the adoption of policies on the treatment of options in connection with director or employee retirement also contributed to the increase in stock compensation expense during 2010. The options to

purchase an aggregate of 948,000 shares granted in December 2010 did not impact our 2010 expense significantly but the amortization of the $1,468,000 fair value of the 2010 options will impact our 2011 expense.

Table of Contents

New Accounting Pronouncements

In October 2009, the Financial Accounting Standards Board, or FASB, issued Accounting Standard Update No. 2009-13, Multiple-Element Revenue Arrangements (ASU No. 2009-13), which updates the existing multiple-element revenue arrangements guidance currently included in Accounting Standards Codification No. 605-25 in two ways. The first change relates to the determination of when the individual deliverables included in a multiple-element arrangement may be treated as separate units of accounting. This is significant as it will likely result in the requirement to separate more deliverables within an arrangement, ultimately leading to less revenue deferral. The second change modifies the manner in which the transaction consideration is allocated across the separately identified deliverables. ASU No. 2009-13 also significantly expands the disclosures required for multiple-element revenue arrangements. ASU No. 2009-13 will be effective for the first annual reporting period beginning on or after June 15, 2010, and may be applied retrospectively for all periods presented or prospectively to arrangements entered into or materially modified after the adoption date. Since our period of continuing involvement in the research portions of our current collaboration agreements was completed during 2010 and since all of the up-front payments received under these collaborations have been fully amortized as of December 31, 2010, ASU No. 2009-13 will have no effect on our financial position and results of operations through December 31, 2010. We will evaluate the effect that ASU No. 2009-13 may have on our policy for recognizing revenue under any future collaboration agreements.

In April 2010, the FASB issued Accounting Standard Update No. 2010-17, Milestone Method of Revenue Recognition (ASU No. 2010-17), which provides guidance on defining a milestone and determining when it may be appropriate to apply the milestone method of revenue recognition for research or development transactions. Prior to the issuance of ASU No. 2010-17, authoritative guidance on the use of the milestone method did not exist. ASU No. 2010-17 is effective on a prospective basis for milestones achieved in fiscal years, and interim periods within those years, beginning on or after June 15, 2010 with early adoption permitted. Alternatively, ASU No. 2010-17 can be adopted retrospectively for all prior periods. Since we have not elected early adoption and we do not intend to elect retrospective adoption, ASU No. 2010-17 will have no effect on our financial position and results of operations through December 31, 2010. We will evaluate the effect that ASU No. 2010-17 may have on our policy for recognizing revenue on any milestones that we receive in future periods.

Results of Operations

Years ended December 31, 2010, 2009 and 2008

Alliance Revenue

Our alliance revenues are comprised primarily of revenue earned under various collaboration and licensing agreements which include license fees, research and development revenues, including reimbursement of internal and third-party expenses, milestones and patent-related reimbursements.

The following table is a summary of our alliance revenue earned under our collaboration and licensing agreements:

	Year Ended December 31,			Annual Percentage Change	
	2010	2009	2008	2010/2009	2009/2008
	(In millions)				
License fees	$ 12.2	$ 22.2	$ 21.5	(45)%	3%
Research and development	0.1	3.9	2.9	(97)%	34%

Milestones	3.8	8.3	2.0	(54)%	315%
Other		0.1	0.1	(100)%	
Total alliance revenue	$ 16.1	$ 34.5	$ 26.5	(53)%	30%

License Fees. License fees primarily include license fee revenue recognized under our collaborations with Merck KGaA, Merck and Novartis. License fee revenue during 2010, 2009 and 2008 was comprised of amortization of the upfront license fee payments and, if applicable, any research period extension payments we recognized from

Table of Contents

collaborative alliances, with which we were still involved during the period. We recognize license fee revenue ratably over the expected period of our continuing involvement in the collaborations, which generally represents the estimated research period of the agreement. Since we have completed the research portion of our current collaborations, all of the upfront license fee payments have been amortized to revenue. As a result, we do not expect to recognize any additional license fee revenue under these collaborations.

The following table is a summary of license fees recognized under our three principal collaborations:

Collaborator	Year Ended December 31, 2010	2009	2008
		(In millions)	
Merck KGaA	$ 7.3	$ 17.1	$ 15.5
Merck	4.8	5.0	5.0
Novartis			0.8

We received a $40.0 million upfront payment from Merck KGaA in Euros in February 2008 of which we received $39.7 million due to foreign currency exchange rates in effect at the time. We recognized the $40.0 million upfront payment as revenue over the twenty eight-month research term that ended in June 2010. We received a $20.0 million upfront payment from Merck in December 2006. We recognized the $20.0 million upfront payment as revenue over the two-year initial research term and the two-year extension period that ended in December 2010. We received a $4.0 million upfront payment from Novartis in July 2005 and an additional $1.0 million payment in May 2007 to extend the research portion of the agreement. The amount of license fee revenue we recognized under our May 2005 research collaboration with Novartis decreased in 2009 because we completed our research obligations in 2008. The amount of license fee revenue that we recognized under our Merck KGaA collaboration increased in 2009 from 2008 reflecting a full year of involvement. The amount of license fee revenue that we recognized under Merck KGaA and Merck decreased in 2010 as we completed our research obligations under these agreements.

Research and Development. Research and development revenue decreased by $3.8 million in 2010 as a result of decreased reimbursement of costs for the Phase 1b clinical trials of IMO-2055 and the Phase 1 clinical trial of IMO-2055 in healthy subjects; Merck assumed sponsorship of both of these trials by March 2010. Research and development revenue increased by $1.0 million in 2009 compared to 2008 due to the reimbursement in 2009 of clinical trial costs associated with the three clinical trials that we conducted under our collaboration agreement with Merck KGaA. This increase was offset by a decrease in revenue from research reimbursements under our collaboration with Merck as we had fewer employee expenses that were reimbursed under our collaboration with Merck. We do not expect to record significant research and development revenue under either the Merck KGaA or Merck collaborations in 2011.

Milestones. Milestone revenue decreased in 2010, as compared to 2009, and increased in 2009, as compared to 2008, reflecting primarily the timing of recognition of milestone payments received under our collaboration with Merck KGaA. We recognized milestone revenue of $3.8 million in 2010 as a result of the milestone earned in connection with the initiation by Merck KGaA of a Phase 1b clinical trial of EMD 1201081 (Merck KGaA s reference for IMO-2055) in first-line treatment of patients with squamous cell carcinoma of the head and neck. The milestone payments of $8.3 million recognized in 2009 resulted from the initiation of a Phase 1b clinical trial of EMD 1201081 in patients with colorectal cancer and the initiation by Merck KGaA of a Phase 2 clinical trial of IMO-2055 in patients with recurrent or metastatic squamous cell carcinoma of the head and neck. Our 2008 milestone revenue was attributable to $1.0 million earned under our collaboration with Novartis relating to the initiation of a Phase 1 clinical trial of QAX935 by Novartis and $1.0 million earned under our collaboration with Merck relating to a preclinical

milestone achieved by Merck with one of our novel TLR9 agonists used as an adjuvant in a cancer vaccine under preclinical study.

Research and Development Expenses

Research and development expenses increased by approximately $5.6 million, or 30%, from $18.6 million in 2009 to $24.2 million in 2010 and increased by approximately $2.4 million, or 15%, from $16.2 million in 2008 to $18.6 million in 2009. The increase in research and development expenses from 2009 to 2010 was primarily due to increased clinical trial, manufacturing and nonclinical safety study costs associated with IMO-2125 and IMO-3100.

Table of Contents

The increase in research and development expenses from 2008 to 2009 was primarily due to increased IMO-2055 clinical trial expenses associated with the three clinical trials that we conducted under our Merck KGaA agreement, which expenses were reimbursed by Merck KGaA, increased nonclinical safety studies and manufacturing of IMO-3100 in preparation for IMO-3100 clinical trials, and increased discovery research expenses. These increases were offset, in part, by a decrease in nonclinical safety studies and manufacturing of IMO-2125.

	Year Ended December 31,			Annual Percentage Change	
	2010	2009	2008	2010/2009	2009/2008
	(In millions)				
IMO-2125 external development expense	$ 7.5	$ 2.2	$ 3.3	241%	(33)%
IMO-3100 external development expense	5.2	0.6		767%	
IMO-2055 external development expense		3.0	1.9	(100)%	58%
Other drug development expense	3.9	5.6	4.5	(30)%	24%
Basic discovery expense	7.6	7.2	6.5	6%	11%
	$ 24.2	$ 18.6	$ 16.2	30%	15%

In the preceding table, research and development expense is set forth in the following five categories:

IMO-2125 External Development Expenses. These expenses include external expenses that we have incurred in connection with IMO-2125. These external expenses include payments to independent contractors and vendors for drug development activities conducted after the initiation of IMO-2125 clinical development but exclude internal costs such as payroll and overhead expenses. We commenced clinical development of IMO-2125 in May 2007 and since then we have incurred approximately $14.2 million in external development expenses through December 31, 2010, including costs associated with our Phase 1 clinical trials and related nonclinical studies and manufacturing and related process development.

External development expenses for IMO-2125 increased by $5.3 million, or 241%, from $2.2 million in 2009 to $7.5 million in 2010. The increase in IMO-2125 expenses in 2010 compared to 2009 was primarily due to increased expenses resulting from the progression of our Phase 1 clinical trial in null-responder HCV patients, which we initiated in September 2007, the initiation and progression of our Phase 1 clinical trial in treatment-naive HCV patients, which we initiated in October 2009, manufacture of additional supplies of IMO-2125 in 2010, conduct of additional nonclinical safety studies of IMO-2125, and $0.7 million associated with the preparation for a Phase 2 clinical trial in non-responder HCV patients which we subsequently determined not to conduct as we instead plan to conduct a Phase 2 clinical trial in treatment-naïve HCV patients.

External development expenses for IMO-2125 decreased by $1.1 million, or 33%, from $3.3 million in 2008 to $2.2 million in 2009. The decrease in IMO-2125 expenses in 2009 compared to 2008 was primarily attributable to higher manufacturing costs in 2008 associated with producing IMO-2125 in anticipation of our Phase I clinical trials and a decrease in costs for nonclinical safety studies of IMO-2125, which decreased because a lower level of nonclinical safety and manufacturing activity was required to support the clinical trials ongoing during 2009. This decrease was partially offset by an increase in costs related to our Phase 1 clinical trial to assess the safety of IMO-2125 in combination with ribavirin in treatment-naïve HCV patients, which we initiated in October 2009.

In May 2007, we submitted an Investigational New Drug, or IND, application for IMO-2125 to the United States Food and Drug Administration, or FDA. In September 2007, we initiated a Phase 1 clinical trial of IMO-2125 in patients with genotype 1 chronic HCV infection who had no response to a prior regimen of the current standard of care therapy specified by the protocol as patients who failed to achieve a 2 $\log_{10}$ reduction in HCV viral load after at least 12 weeks of treatment with the current standard of care therapy. HCV viral load refers to the concentration of virus in the blood. A $\log_{10}$ reduction means a decrease in virus concentration to 10% of the original concentration. A 2 $\log_{10}$ reduction means a decrease to 1% of the original concentration. We refer to these patients as null-responder HCV patients. The clinical trial was conducted at a total of eleven sites in the United States with a total of 58 patients. In the trial, we enrolled cohorts of ten patients at escalating IMO-2125 dose levels of 0.04 mg/kg/week, 0.08 mg/kg/week, 0.16 mg/kg/week, 0.32 mg/kg/week, and 0.48 mg/kg/week. Of the ten patients in a cohort, eight were randomized to receive IMO-2125 treatment and

Table of Contents

two were randomized to receive placebo treatment. Patients received a single dose of IMO-2125 or placebo once per week by subcutaneous injection for four weeks. Based on interim results from these cohorts, we enrolled seven additional patients who received 0.16 mg/kg of IMO-2125 twice weekly for four weeks. The primary objective of the trial was to assess the safety of IMO-2125 at each dose level. We also evaluated the effects of IMO-2125 on HCV RNA levels and on immune system activation in this trial. We presented results from the Phase 1 clinical trial of IMO-2125 in null-responder HCV patients at scientific meetings in April 2010 and in October 2010.

We also conducted a Phase 1 clinical trial of IMO-2125 in combination with ribavirin, an antiviral medication approved for use in combination with interferon-alpha in the treatment of HCV infection, in treatment-naïve patients with genotype 1 chronic HCV infection. We initiated the trial in October 2009. In this clinical trial, a total of 63 patients received IMO-2125 or a control article by subcutaneous injection once per week for four weeks at escalating dose levels in combination with daily oral administration of standard doses of ribavirin. Fifteen patients were enrolled in the first cohort, with 12 randomized to receive IMO-2125 at 0.08 mg/kg/week and ribavirin and three randomized to receive placebo and ribavirin as the control. Eighteen patients were enrolled in the second cohort, with 12 randomized to receive IMO-2125 at 0.16 mg/kg/week and ribavirin and six randomized to receive pegylated recombinant alfa-2a interferon and ribavirin as the control. The third cohort enrolled 30 patients randomized 12:12:6 to receive IMO-2125 at 0.32 mg/kg/week, IMO-2125 at 0.16 mg/kg twice per week, or pegylated recombinant alfa-2a interferon, respectively, all with ribavirin. The primary objective of the trial was to assess the safety and tolerability of IMO-2125 in combination with ribavirin. In addition, we monitored the effect of treatment on HCV RNA levels. The clinical trial was conducted at sites in France, Russia, and Hungary. In December 2010, we announced preliminary data from the Phase 1 clinical trial of IMO-2125 in treatment-naïve HCV patients.

We are planning a 12-week Phase 2 clinical trial of IMO-2125 plus ribavirin with a control arm of pegylated recombinant alfa-2a interferon plus ribavirin in approximately 80 treatment-naïve HCV patients. Our objectives of the Phase 2 clinical trial will be to determine optimal dosing, provide longer-term safety data, and generate additional antiviral activity data. We intend to initiate enrollment in the Phase 2 clinical trial in the second quarter of 2011. We intend for the trial to provide the basis for subsequent clinical development of IMO-2125 as an alternative to recombinant interferon in combination therapy with direct-acting antiviral agents.

IMO-3100 External Development Expenses. These expenses include external expenses that we have incurred in connection with IMO-3100 since November 2009, when we commenced clinical development of IMO-3100. These external expenses include payments to independent contractors and vendors for drug development activities conducted after the initiation of IMO-3100 clinical development but exclude internal costs such as payroll and overhead expenses. Since November 2009, we have incurred approximately $5.8 million in external development expenses through December 31, 2010, including costs associated with the single-dose Phase 1 clinical trial in healthy subjects we initiated in January 2010 and the multiple-dose Phase 1 clinical trial in healthy subjects we initiated in July 2010, manufacturing and process development activities related to the production of IMO-3100, and conduct of additional nonclinical safety studies.

External development expenses for IMO-3100 increased by $4.6 million, or 767%, from $0.6 million in 2009 to $5.2 million in 2010. The increase in IMO-3100 expenses in 2010 compared to 2009 was primarily due to expenses associated with our single-dose Phase 1 clinical trial, which we initiated in January 2010, and with our multiple-dose Phase 1 clinical trial, which we initiated in July 2010, nonclinical safety studies, the manufacture of additional supplies of IMO-3100 in 2010, and $0.4 million associated with the cancellation of two previously planned nonclinical chronic toxicology studies.

In November 2009, we submitted to the FDA an IND application for the clinical evaluation of IMO-3100 in autoimmune diseases. In January 2010, we initiated a Phase 1 clinical trial of IMO-3100 in healthy subjects. In this single-dose, dose escalation Phase 1 trial, IMO-3100 was administered by subcutaneous injection at dose levels of

0.04, 0.08, 0.16, 0.32, and 0.64 mg/kg to a total of 36 subjects. At each dose level, six subjects received IMO-3100. An additional six subjects received placebo treatment. The primary objective of the trial was to evaluate the safety and tolerability of IMO-3100. Secondary objectives were to characterize the pharmacokinetic profile of IMO-3100 and to assess the pharmacodynamic mechanism of action of IMO-3100. The pharmacodynamic mechanism of action is how IMO-3100 engages the immune system in the targeted manner, which we assessed through

Table of Contents

measurement of the inhibition of TLR7 and TLR9-mediated cytokine induction in peripheral blood mononuculear cells, or PBMCs. The trial was conducted at a single U.S. site. In October 2010 we announced results from the single-dose Phase 1 clinical trial of IMO-3100. IMO-3100 was well tolerated at all dose levels in the trial.

We have also conducted a four-week multiple-dose Phase 1 clinical trial of IMO-3100 in healthy subjects that we initiated in July 2010 and completed in the third quarter of 2010. We intend to present results of the multi-dose Phase 1 clinical trial at a scientific meeting in the second quarter of 2011.

We intend for the next step in the clinical development of IMO-3100 to be a Phase 2 clinical trial in a selected autoimmune disease indication. We are currently conducting nonclinical studies of IMO-3100, in light of some reversible immune responses that were observed in the 13-week nonclinical toxicology studies we had conducted to support the initiation of Phase 2 clinical trials and that were inconsistent with observations in our other nonclinical studies of IMO-3100. We expect to complete these nonclinical studies during the first half of 2011 and intend to submit to the FDA the results of these nonclinical studies and a protocol for a Phase 2 clinical trial of IMO-3100 in a selected autoimmune disease indication during the third quarter of 2011.

IMO-2055 External Development Expenses. IMO-2055 is being developed for cancer, excluding vaccines, under our collaboration with Merck KGaA. Merck KGaA refers to IMO-2055 as EMD 1201081. External development expenses include payments to independent contractors and vendors for drug development activities conducted after the initiation of IMO-2055 clinical development but exclude internal costs such as payroll and overhead expenses. Since 2003, when we commenced clinical development of IMO-2055 and through December 31, 2010, we have incurred approximately $17.4 million in external expenses in connection with IMO-2055.

Under our collaboration, Merck KGaA is responsible for developing EMD 1201081 for the treatment of cancer excluding vaccines. Prior to March 2010, we conducted clinical trials of EMD 1201081 under the collaboration and Merck KGaA reimbursed us. As of September 2009, Merck KGaA assumed sponsorship of the EMD 1201081 Phase 1b clinical trials. As of March 2010, Merck KGaA assumed sponsorship of the one remaining ongoing clinical trial of EMD 1201081 for the treatment of cancer and responsibility for all further clinical development of EMD 1201081 in the treatment of cancer, excluding vaccines. As a result of Merck KGaA s assumption of sponsorship of the trials, we did not incur significant expenses for EMD 1201081 development in 2010, and do not expect to incur significant EMD 1201081 development expense in 2011 or thereafter.

EMD 1201081 external development expenses decreased by $3.0 million, or 100%, in 2010, as compared to 2009, as a result of Merck KGaA assuming sponsorship of the trials in September 2009 and in March 2010.

EMD 1201081 external development expenses increased by $1.1 million, or 58%, from $1.9 million in 2008 to $3.0 million in 2009. The increase from 2008 to 2009 was primarily attributable to increases in costs, which costs are reimbursed by Merck KGaA, associated with our Phase 1b clinical trials of EMD 1201081 in patients with non-small cell lung cancer, which we initiated in December 2007, and EMD 1201081 in patients with colorectal cancer, for which we commenced dosing in January 2009, and our Phase 1 clinical trial in healthy subjects that we initiated in April 2009. This increase was offset, in part, by a decrease in EMD 1201081 expenses associated with our Phase 2 Stage A clinical trial in patients with metastatic or recurrent clear cell renal cancer which we completed in the second quarter of 2009. Approximately $2.9 million and $1.4 million of expenses in 2009 and 2008, respectively, were reimbursed by Merck KGaA. Additional IMO-2055 external development expenses were incurred for specified projects initiated prior to the effective date of the collaboration during 2008.

Other Drug Development Expenses. These expenses include external expenses associated with preclinical development of identified compounds in anticipation of advancing these compounds into clinical development. In addition, these expenses include internal costs, such as payroll and overhead expenses, associated with preclinical

development and products in clinical development. The external expenses associated with preclinical compounds include payments to contract vendors for manufacturing and the related stability studies, preclinical studies, including animal toxicology and pharmacology studies, and professional fees. Expenses associated with products in clinical development include costs associated with our Hepatitis C Clinical Advisory Board and our Autoimmune Disease Scientific Advisory Board.

Table of Contents

The decrease in other drug development expenses in 2010 compared to 2009, was primarily due to the inclusion of IMO-3100 expenses incurred after the commencement of clinical development in November 2009 in the IMO-3100 External Development Expense category shown separately above. Prior to November 2009, nonclinical safety and pharmacology study expenses related to IMO-3100 and costs to manufacture IMO-3100 were included in the Other Drug Development Expenses category. The increase in 2009 from 2008 was primarily due to increases in manufacturing and other pre-IND direct external expenses, including nonclinical safety studies, related to IMO-3100 that we incurred through November 2009 when we submitted the IND for IMO-3100 to the FDA.

Basic Discovery Expenses. These expenses include our internal and external expenses relating to the discovery of our TLR-targeted programs, including agonists and antagonists of TLRs 3, 7, 8 and 9, and TLR antisense. These expenses reflect payments for laboratory supplies, external research, and professional fees, as well as payroll and overhead expenses. The increase in basic discovery expenses in 2010 from 2009 is primarily attributable to higher employee expenses, including higher stock compensation expense associated with stock options granted after September 30, 2009 and the addition of a Vice President of Biology to our discovery staff in July 2009, and higher allocated facilities costs, offset by a decrease in research supplies related to decreased research conducted under our collaboration agreements and lower external nonclinical research costs. The increase in 2009 as compared to 2008 was primarily attributable to an increase in laboratory supply costs and allocated facility costs and higher stock-based compensation for employees.

We do not know if we will be successful in developing any drug candidate from our research and development programs. At this time, without knowing the results of our ongoing clinical trials and without an established plan for future clinical tests of drug candidates, we cannot reasonably estimate or know the nature, timing, and costs of the efforts that will be necessary to complete the remainder of the development of, or the period, if any, in which material net cash inflows may commence from, any drug candidate from our research and development programs. Moreover, the clinical development of any drug candidate from our research and development programs is subject to numerous risks and uncertainties associated with the duration and cost of clinical trials, which vary significantly over the life of a project as a result of unanticipated events arising during clinical development.

General and Administrative Expenses

General and administrative expenses increased by approximately $1.3 million, or 15%, from $8.6 million in 2009 to $9.9 million in 2010 and decreased by approximately $1.2 million, or 12%, from $9.8 million in 2008 to $8.6 million in 2009. General and administrative expenses consist primarily of salary expense, stock compensation expense, consulting fees and professional legal fees associated, in part, with our patent applications and maintenance, our regulatory filing requirements, and business development.

The $1.3 million increase from 2009 to 2010 was primarily due to higher stock compensation expense primarily resulting from stock options granted after September 30, 2009 and the modification of stock options during 2010, higher employee expenses, higher legal fees related to patent maintenance and corporate matters, and increased consulting fees associated with business and strategic initiatives, offset, in part, by a decrease in allocated facilities costs. The $1.2 million decrease from 2008 to 2009 was primarily due to lower consulting fees and lower external patent expenses and stock-based compensation for consultants in 2009. This decrease was offset by increased employee costs in this area, including higher stock-based compensation expense for employees.

Investment Income, Net

Investment income amounted to $0.1 million in 2010 and 2009, and decreased by approximately $1.2 million, or 92%, from $1.3 million in 2008 to $0.1 million in 2009. The decrease from 2008 to 2009 is primarily attributable to lower interest rates on our money market funds, lower yields on our investments, and lower average funds earning interest

during 2009.

Table of Contents

Interest Expense

Interest expense was negligible in 2010 and 2009. Interest expense in 2008 reflected interest through our March 2008 repayment in full of our note payable to General Electric Capital Corporation, or GE, and a prepayment premium associated with the note repayment. As a result of our repayment, the note was cancelled.

Income Tax Expense

In 2009, we recorded a tax benefit of approximately $44,000 which was primarily related to the carry back of net operating losses to recover 2006 alternative minimum tax as a result of the enactment of the Worker, Homeownership, and Business Assistance Act of 2009. During 2008, we recorded a tax benefit of approximately $24,000 which was primarily related to refundable research and experimental tax credits.

Foreign Currency Exchange Loss

Foreign currency exchange loss was $0.1 million in 2010, negligible in 2009 and $0.3 million in 2008. Foreign currency exchange gains and losses may result from amounts received under our Merck KGaA collaboration agreement and payments under our clinical trial agreements that are denominated in Euros.

In 2009, we earned a milestone, denominated in Euros, under our Merck KGaA collaboration, for which we had a $4.3 million receivable at December 31, 2009. Merck KGaA paid us for this milestone in February 2010 and we received $4.1 million based on foreign exchange rates in effect at the time of payment as a result of the strengthening value of the U.S. dollar. In the third quarter of 2010, we earned a $3.8 million milestone, denominated in Euros, under our Merck KGaA collaboration for which we received $4.1 million based on foreign exchange rates in effect at the time of payment as a result of the weakening value of the U.S. dollar. The remaining $0.2 million foreign currency exchange loss in 2010 is attributable to the foreign exchange rates in effect at the time of payments made under our clinical trial agreements that are denominated in Euros.

In February 2008, Merck KGaA paid us a $40.0 million upfront license fee denominated in Euros. We received $39.7 million U.S. dollars due to foreign currency exchange rates in effect at the time we received the payment as a result of the strengthening value of the U.S. dollar, which resulted in the foreign currency exchange loss.

Net (Loss) Income

As a result of the factors discussed above, we had a net loss of $18.0 million for the year ended December 31, 2010. We had net income of $7.5 million and $1.5 million for the years ended December 31, 2009 and 2008, respectively. We have incurred losses of $91.4 million since January 1, 2001. We incurred net losses of $260.2 million prior to December 31, 2000 during which time we were involved in the development of antisense technology. Since our inception, we had an accumulated deficit of $351.6 million through December 31, 2010. We may incur substantial operating losses in future periods.

Net Operating Loss Carryforwards

As of December 31, 2010, we had cumulative net operating loss carryforwards, or NOLs, of approximately $239.5 million and $44.9 million available to reduce federal and state taxable income which expire through 2030. In addition, we had cumulative federal and state tax credit carryforwards of $5.7 million and $4.8 million, respectively, available to reduce federal and state income taxes, which expire through 2030 and 2025, respectively. The Tax Reform Act of 1986 contains provisions, which limit the amount of NOLs and credit carryforwards that companies may utilize in any one year in the event of cumulative changes in ownership over a three-year period in excess of

50%. We have completed several financings since the effective date of the Tax Reform Act of 1986, which as of December 31, 2010, have resulted in ownership changes in excess of 50% and that will significantly limit our ability to utilize our NOL and tax credit carryforwards. Ownership changes in future periods may place additional limits on our ability to utilize net operating loss and tax credit carryforwards.

Table of Contents

Liquidity and Capital Resources

Sources of Liquidity

We require cash to fund our operating expenses, to make capital expenditures and to pay debt service. Historically, we have funded our cash requirements primarily through the following:

equity and debt financing;

license fees, research funding and milestone payments under collaborative and license agreements;

interest income; and

lease financings.

On August 5, 2010, we raised $15.1 million in gross proceeds from a registered direct offering of our common stock to institutional investors. In the offering, we sold 4,071,005 shares of common stock and warrants to purchase 1,628,402 shares of common stock. The common stock and the warrants were sold in units at a price of $3.71 per unit, with each unit consisting of one share of common stock and warrants to purchase 0.40 shares of common stock. The warrants to purchase common stock have an exercise price of $3.71 per share, are exercisable immediately, and will expire if not exercised on or prior to August 5, 2015. The net proceeds to us from the offering, excluding the proceeds of any future exercise of the warrants, were approximately $14.1 million.

In addition to the warrants mentioned above, as of December 31, 2010, warrants to purchase 1,704,545 shares of our common stock at an exercise price of $5.20 per share and warrants to purchase 761,718 shares of our common stock at an exercise price of $5.92 per share were outstanding. These warrants were issued in March 2006 and expire on September 24, 2011.

During 2010 and 2009, we received total proceeds of $0.1 million and $0.3 million, respectively, from purchases made under our employee stock purchase plan and stock option exercises. During 2008, we received total proceeds of $10.0 million from warrant exercises, stock option exercises and purchases under our employee stock purchase plan.

Under the terms of our collaboration with Merck KGaA, in February 2008 Merck KGaA paid us a $40.0 million upfront license fee in Euros of which we received $39.7 million due to foreign currency exchange rates. Since entering this agreement, we have received approximately $12.1 million in milestone payments and have been reimbursed $4.5 million for expenses related to the development of EMD 1201081.

In December 2006, we entered into an exclusive license and research collaboration agreement with Merck to research, develop and commercialize vaccine products containing our TLR7, 8 and 9 agonists in the fields of cancer, infectious diseases and Alzheimer s disease. Under the terms of the agreement, Merck paid us a $20.0 million license fee in December 2006. In addition, in connection with the execution of the license and collaboration agreement, we issued and sold to Merck 1,818,182 shares of our common stock for a price of $5.50 per share resulting in an aggregate purchase price of $10.0 million. Since entering this agreement, we have received $1.0 million in milestone payments and $3.4 million in research and development payments.

Cash Flows

As of December 31, 2010, we had approximately $34.6 million in cash and cash equivalents and investments, a net decrease of approximately $5.6 million from December 31, 2009. Net cash used in operating activities totaled

$19.6 million during 2010. The $19.6 million reflects our $18.0 million net loss for 2010, as adjusted for non-cash revenue and expenses, including the reduction in deferred revenue associated with the recognition of deferred revenue under our collaboration agreements, stock-based compensation, depreciation and amortization. It also reflects changes in our accounts receivable, prepaid expenses and accounts payable, accrued expenses and other liabilities.

The net cash used in investing activities during 2010 of $3.1 million reflects our purchase of approximately $10.3 million in securities offset by the proceeds of approximately $7.2 million from securities that matured in 2010. The net cash provided by investing activities also reflects a $0.1 million investment in laboratory, office and

Table of Contents

computer equipment and an increase in available cash of $0.1 million as a result of a reduction in our restricted cash requirements for a security deposit under the terms of the lease for our facility.

The net cash provided by financing activities during 2010 of $14.2 million primarily reflects the $14.1 million in net proceeds from the sale of common stock and warrants in August 2010 and $0.1 million in proceeds received from the exercise of common stock options and employee stock purchases during 2010 offset, in part, by payments under a capital lease.

As of December 31, 2009, we had approximately $40.2 million in cash and cash equivalents and investments, a net decrease of approximately $15.4 million from December 31, 2008. Net cash used in operating activities totaled $15.6 million during 2009. The $15.6 million reflects our $7.5 million of net income for 2009, as adjusted for non-cash revenue and expenses, including the reduction in deferred revenue associated with the recognition of deferred revenue under our collaboration agreements, stock-based compensation, depreciation and amortization. It also reflects the changes in our accounts receivable, prepaid expenses and accounts payable, accrued expenses and other liabilities.

The net cash used in investing activities during 2009 of $4.3 million reflects our purchase of approximately $14.8 million in securities offset by the proceeds of approximately $10.5 million from securities that matured in 2009. The net cash provided by investing activities also reflects a $0.1 million investment in laboratory, office and computer equipment and an increase in available cash of $0.1 million as a result of a reduction in our restricted cash requirements for a security deposit under the terms of the operating lease for our facility.

The net cash provided by financing activities during 2009 of $0.2 million primarily reflects the $0.3 million in proceeds received from the exercise of common stock options and employee stock purchases during 2009 offset, in part, by $0.1 million used to repurchase 6,615 shares of our common stock and payments under a capital lease.

Funding Requirements

We have incurred operating losses in all fiscal years except 2002, 2008 and 2009, and we had an accumulated deficit of $351.6 million at December 31, 2010. We expect to incur substantial operating losses in future periods. These losses, among other things, have had and will continue to have an adverse effect on our stockholders equity, total assets and working capital.

We have received no revenues from the sale of drugs. To date, almost all of our revenues have been from collaboration and license agreements. We have devoted substantially all of our efforts to research and development, including clinical trials, and we have not completed development of any drugs. Because of the numerous risks and uncertainties associated with developing drugs, we are unable to predict the extent of any future losses, whether or when any of our products will become commercially available, or when we will become profitable, if at all.

We do not expect to generate significant additional funds internally until we successfully complete development and obtain marketing approval for products, either alone or in collaboration with third parties, which we expect will take a number of years. In addition, we have no committed external sources of funds.

We had cash, cash equivalents, and investments of $34.6 million at December 31, 2010. We believe that our existing cash, cash equivalents, and investments will be sufficient to fund our operations at least through March 31, 2012 based on our current operating plan, including a Phase 2 clinical trial of IMO-2125 in HCV patients for which we intend to initiate enrollment in the second quarter of 2011 and nonclinical studies to support the initiation of a Phase 2 clinical trial of IMO-3100 in an initial autoimmune disease indication during this period. We expect to need to raise additional funds to operate our business beyond March 31, 2012. We may seek additional capital due to favorable market

conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans.

We expect to seek additional funding through collaborations, the sale or license of assets or financings of equity or debt securities. We believe that the key factors that will affect our ability to obtain additional funding are:

the success of our clinical and preclinical development programs;

the success of our existing strategic collaborations with Merck KGaA and Merck;

Table of Contents

the cost, timing and outcome of regulatory reviews;

competitive and potentially competitive products and technologies and investors receptivity to our drug candidates and the technology underlying them in light of competitive products and technologies;

the receptivity of the capital markets to financings by biotechnology companies generally and companies with drug candidates and technologies such as ours specifically; and

our ability to enter into new strategic collaborations with biotechnology and pharmaceutical companies and the success of such collaborations.

In addition, increases in expenses or delays in clinical development may adversely impact our cash position and require additional funds or further cost reductions. Additional financing may not be available to us when we need it or may not be available to us on favorable terms. We could be required to seek funds through collaborative alliances or others that may require us to relinquish rights to some of our technologies, drug candidates or drugs that we would otherwise pursue on our own. In addition, if we raise additional funds by issuing equity securities, our then existing stockholders will experience dilution. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends, and are likely to include rights that are senior to the holders of our common stock. Any additional debt financing or equity that we raise may contain terms, such as liquidation and other preferences, or liens or other restrictions on our assets, which are not favorable to us or our stockholders. The terms of any financing may adversely affect the holdings or the rights of existing stockholders. If we are unable to obtain adequate funding on a timely basis or at all, we may be required to significantly curtail one or more of our discovery or development programs and possibly relinquish rights to portions of our technology or products.

Contractual Obligations

As of December 31, 2010, our contractual commitments were as follows:

	Payments Due by Period				
Contractual Commitment	**Total**	**Less than 1 year**	**1-3 years**	**3-5 years**	**After 5 years**
			(In thousands)		
Operating lease	$ 4,936	$ 1,391	$ 2,919	$ 626	$
License agreements	310	35	70	70	135
Capital lease	8	8			
Total	$ 5,254	$ 1,434	$ 2,989	$ 696	$ 135

Our only material lease commitment relates to our facility in Cambridge, Massachusetts. Under our antisense technology in-license agreements, we are obligated to make milestone payments upon achieving specified milestones and to pay royalties to our licensors. In addition to the minimum license fees shown in the above table, there are contingent milestone and royalty payment obligations that are not included.

As of December 31, 2010, we had no off balance sheet arrangements. We do not expect to make any material capital expenditures in 2011.

Item 7A. ***Quantitative and Qualitative Disclosures about Market Risk.***

Foreign currency exchange gains and losses may result from amounts received under our Merck KGaA collaboration agreement and payments under our clinical trial agreements that are denominated in Euros. As of December 31, 2010, we had accrued obligations of 0.3 million, or $0.4 million. All other assets and liabilities are in U.S. dollars, which is our functional currency.

We maintain investments in accordance with our investment policy. The primary objectives of our investment activities are to preserve principal, maintain proper liquidity to meet operating needs and maximize yields. Although our investments are subject to credit risk, our investment policy specifies credit quality standards for our investments and limits the amount of credit exposure from any single issue, issuer or type of investment. We

Table of Contents

regularly review our investment holdings in light of the then current economic environment. We do not own auction rate securities or derivative financial investment instruments in our investment portfolio.

Based on a hypothetical ten percent adverse movement in interest rates, the potential losses in future earnings, fair value of risk sensitive financial instruments, and cash flows are immaterial, although the actual effects may differ materially from the hypothetical analysis.

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

All financial statements required to be filed hereunder are filed as listed under Item 15(a) of this Annual Report on Form 10-K and are incorporated herein by this reference.

Quarterly Operating Results (Unaudited)

The following table presents the unaudited statement of operations data for each of the eight quarters in the period ended December 31, 2010. The information for each of these quarters is unaudited, but has been prepared on the same basis as the audited financial statements appearing elsewhere in this Annual Report on Form 10-K. In our opinion, all necessary adjustments, consisting only of normal recurring adjustments, have been made to present fairly the unaudited quarterly results when read in conjunction with the audited financial statements and the notes thereto appearing elsewhere in this document. These operating results are not necessarily indicative of the results of operations that may be expected for any future period.

	Three Months Ended							
	Dec. 31, 2010	Sep. 30, 2010	Jun. 30, 2010	Mar. 31, 2010	Dec. 31, 2009	Sep. 30, 2009	Jun. 30, 2009	Mar. 31, 2009
	(In thousands, except per share data)							
Statement of Operations Data:								
Alliance revenues	$ 1,058	$ 5,089	$ 4,386	$ 5,577	$ 10,180	$ 6,538	$ 11,497	$ 6,303
Operating expenses:								
Research and development	4,893	7,786	6,961	4,586	4,391	4,288	5,413	4,478
General and administrative	2,158	2,193	2,784	2,732	2,070	2,210	2,133	2,148
Total operating expenses	7,051	9,979	9,745	7,318	6,461	6,498	7,546	6,626
(Loss) income from operations	(5,993)	(4,890)	(5,359)	(1,741)	3,719	40	3,951	(323)
Investment income	30	31	29	26	23	20	31	71
Interest expense	(2)				(3)			
Foreign currency exchange (loss) gain	(48)	148	34	(228)	(21)	(6)		
	(6,013)	(4,711)	(5,296)	(1,943)	3,718	54	3,982	(252)

(Loss) income before income taxes					214	(30)	(140)	
Income tax benefit (provision)								
Net (loss) income	$ (6,013)	$ (4,711)	$ (5,296)	$ (1,943)	$ 3,932	$ 24	$ 3,842	$ (252)
Basic net (loss) income per common share	$ (0.22)	$ (0.18)	$ (0.23)	$ (0.08)	$ 0.17		$ 0.16	$ (0.01)
Diluted net (loss) income per common share	$ (0.22)	$ (0.18)	$ (0.23)	$ (0.08)	$ 0.17		$ 0.16	$ (0.01)
Shares used in computing basic net (loss) income per common share(1)	27,587	25,980	23,473	23,462	23,452	23,441	23,407	23,379
Shares used in computing diluted net (loss) income per common share(1)	27,587	25,980	23,473	23,462	23,808	24,341	23,956	23,379

(1) Computed on the basis described in Note 13 of notes to financial statements appearing elsewhere in this Annual Report on Form 10-K.

Table of Contents

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

None.

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

Disclosure Controls and Procedures

Our management, with the participation of our principal executive officer and principal financial officer, evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, or the Exchange Act) as of December 31, 2010. In designing and evaluating our disclosure controls and procedures, management recognized that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and our management necessarily applied its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on this evaluation, our chief executive officer and chief financial officer concluded that as of December 31, 2010, our disclosure controls and procedures were (1) designed to ensure that material information relating to us is made known to our chief executive officer and chief financial officer by others, particularly during the period in which this report was prepared, and (2) effective, in that they provide reasonable assurance that information required to be disclosed by us in the reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC s rules and forms.

Internal Control over Financial Reporting

a) Management s Annual Report on Internal Control over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is defined in Rule 13a-15(f) and 15d-15(f) promulgated under the Exchange Act as a process designed by, or under the supervision of, the Company s principal executive and principal financial officers and effected by the Company s board of directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles and includes those policies and procedures that:

Pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the Company;

Provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and directors of the Company; and

Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company s assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Therefore, even those systems determined to be effective can provide only reasonable assurance with respect to financial statement preparation and presentation. Projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Management assessed the effectiveness of our internal control over financial reporting as of December 31, 2010. In making this assessment, management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control Integrated Framework*.

Based on this assessment, management believes that, as of December 31, 2010, the Company s internal control over financial reporting is effective based on those criteria.

The Company s independent registered public accounting firm has issued an audit report on the Company s internal control over financial reporting. This report appears below.

Table of Contents

b) Attestation Report of the Independent Registered Public Accounting Firm

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders of Idera Pharmaceuticals, Inc.

We have audited Idera Pharmaceuticals, Inc. s internal control over financial reporting as of December 31, 2010, based on criteria established in Internal Control Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (the COSO criteria). Idera Pharmaceuticals, Inc. s management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management s Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the company s internal control over financial reporting based on our audit.

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

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

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

In our opinion, Idera Pharmaceuticals, Inc. maintained, in all material respects, effective internal control over financial reporting as of December 31, 2010, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the balance sheets of Idera Pharmaceuticals, Inc. 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 of Idera Pharmaceuticals, Inc. and our report dated March 10, 2011 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Boston, Massachusetts
March 10, 2011

Table of Contents

c) Changes in Internal Controls over Financial Reporting.

No change in our internal control over financial reporting occurred during the fiscal year ending December 31, 2010 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

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

None.

PART III.

The response to the Part III items incorporate by reference certain sections of our Proxy Statement for our annual meeting of stockholders to be held in June 2011.

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

We have adopted a written code of business conduct and ethics that applies to our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions. We have posted a current copy of the Code of Business Conduct and Ethics in the Investors Corporate Governance section of our website, which is located at www.iderapharma.com. We intend to satisfy the disclosure requirements under Item 5.05 of Form 8-K regarding an amendment to, or waiver from, a provision of our code of business conduct and ethics by posting such information on our website at www.iderapharma.com.

The remainder of the response to this item is contained under the following captions in the 2011 Proxy Statement: Proposal 1 Election of Directors, Section 16(a) Beneficial Ownership Reporting Compliance and Corporate Governance Information, which sections are incorporated herein by reference.

Item 11. ***Executive Compensation.***

The responses to this item are contained in the 2011 Proxy Statement under the captions: Corporate Governance Information Compensation Committee Interlocks and Insider Participation and Executive Compensation, which sections are incorporated herein by reference.

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

The response to this item is contained in the 2011 Proxy Statement under the caption Security Ownership of Certain Beneficial Owners and Management, which section is incorporated herein by reference.

The disclosures required for securities authorized for issuance under equity compensation plans are contained in the 2011 Proxy Statement under the caption Equity Compensation Plan Information, which section is incorporated herein by reference.

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

The response to this item is contained in the 2011 Proxy Statement under the captions Transactions with Related Persons, and Corporate Governance Information Director Independence, which sections are incorporated herein by reference.

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

The response to this item is contained in the 2011 Proxy Statement under the caption Independent Registered Public Accounting Firm Fees, which section is incorporated herein by reference.

Table of Contents

PART IV.

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

(a) (1) *Financial Statements.*

(2) We are not filing any financial statement schedules as part of this Annual Report on Form 10-K because they are not applicable or the required information is included in the financial statements or notes thereto.

(3) The list of Exhibits filed as a part of this Annual Report on Form 10-K is set forth on the Exhibit Index immediately preceding such Exhibits and is incorporated herein by this reference.

(b) The list of Exhibits filed as a part of this Annual Report on Form 10-K is set forth on the Exhibit Index immediately preceding such Exhibits and is incorporated herein by this reference.

(c) None.

Table of Contents

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, on this 10th day of March 2011.

Idera Pharmaceuticals, Inc.

By: /s/ Sudhir Agrawal
Sudhir Agrawal
Chairman, President and
Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Sudhir Agrawal Sudhir Agrawal, D. Phil.	Chairman, President and Chief Executive Officer (Principal Executive Officer)	March 10, 2011
/s/ Louis J. Arcudi, III Louis J. Arcudi III	Chief Financial Officer, Treasurer and Secretary (Principal Financial and Accounting Officer)	March 10, 2011
/s/ Youssef El Zein Youssef El Zein	Director	March 10, 2011
/s/ C. Keith Hartley C. Keith Hartley	Director	March 10, 2011
/s/ Robert W. Karr Robert W. Karr, M.D.	Director	March 10, 2011
/s/ Malcolm MacCoss Malcolm MacCoss, Ph.D.	Director	March 10, 2011
/s/ Hans Mueller	Director	March 10, 2011

Hans Mueller, Ph.D.		
/s/ William S. Reardon	Director	March 10, 2011
William S. Reardon, C.P.A.		
/s/ Eve E. Slater	Director	March 10, 2011
Eve E. Slater, M.D., F.A.C.C.		
/s/ James B. Wyngaarden	Director	March 10, 2011
James B. Wyngaarden, M.D.		

IDERA PHARMACEUTICALS, INC.

INDEX TO FINANCIAL STATEMENTS
December 31, 2010

Table of Contents

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Stockholders of Idera Pharmaceuticals, Inc.

We have audited the accompanying balance sheets of Idera Pharmaceuticals, Inc. 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 Idera Pharmaceuticals, Inc. 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), Idera Pharmaceuticals, Inc. s internal control over financial reporting as of December 31, 2010, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated March 10, 2011 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Boston, Massachusetts
March 10, 2011

Table of Contents

IDERA PHARMACEUTICALS, INC.

BALANCE SHEETS

(In thousands, except per share amounts)	December 31, 2010	December 31, 2009
ASSETS		
Current assets:		
Cash and cash equivalents	$ 17,008	$ 25,471
Short-term investments	17,635	6,270
Receivables	2	4,497
Prepaid expenses and other current assets	995	1,030
Total current assets	35,640	37,268
Property and equipment, net	930	1,387
Non-current portion of prepaid expenses		104
Long-term investments		8,466
Restricted cash, net of current portion	311	414
Total assets	$ 36,881	$ 47,639
LIABILITIES AND STOCKHOLDERS EQUITY		
Current liabilities:		
Accounts payable	$ 1,757	$ 1,166
Accrued expenses	1,775	931
Current portion of capital lease	8	19
Current portion of deferred revenue		12,098
Total current liabilities	3,540	14,214
Capital lease obligation, net of current portion		9
Deferred revenue, net of current portion		67
Other liabilities	240	244
Total liabilities	3,780	14,534
Commitments and contingencies (Note 10)		
Stockholders equity:		
Preferred stock, $0.01 par value, Authorized 5,000 shares Series A convertible preferred stock, Designated 1,500 shares, Issued and outstanding 1 share		
Common stock, $0.001 par value, Authorized 70,000 shares Issued and outstanding 27,596 and 23,479 shares at December 31, 2010 and 2009, respectively	28	23

Additional paid-in capital	384,702	366,780
Accumulated deficit	(351,642)	(333,679)
Accumulated other comprehensive income (loss)	13	(19)
Total stockholders equity	33,101	33,105
Total liabilities and stockholders equity	$ 36,881	$ 47,639

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

Table of Contents

IDERA PHARMACEUTICALS, INC.

STATEMENTS OF OPERATIONS

(In thousands, except per share amounts)	Years Ended December 31, 2010	2009	2008
Alliance revenue	$ 16,110	$ 34,518	$ 26,450
Operating expenses:			
Research and development	24,226	18,570	16,152
General and administrative	9,867	8,561	9,798
Total operating expenses	34,093	27,131	25,950
(Loss) income from operations	(17,983)	7,387	500
Other income (expense):			
Investment income, net	116	145	1,344
Interest expense	(2)	(3)	(92)
Foreign currency exchange loss	(94)	(27)	(267)
(Loss) income before income taxes	(17,963)	7,502	1,485
Income tax benefit		44	24
Net (loss) income	$ (17,963)	$ 7,546	$ 1,509
Net (loss) income per common share (Note 13):			
Basic	$ (0.71)	$ 0.32	$ 0.07
Diluted	$ (0.71)	$ 0.31	$ 0.06
Shares used in computing basic net (loss) income per common share	25,139	23,420	22,655
Shares used in computing diluted net (loss) income per common share	25,139	24,079	25,331

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

Table of Contents

IDERA PHARMACEUTICALS, INC.

STATEMENTS OF STOCKHOLDERS EQUITY

(In thousands)	Common Stock Number of Shares	$0.001 Par Value	Additional Paid-In Capital	Accumulated Deficit	Accumulated Other Comprehensive (Loss/Income)	Total Stockholders Equity
Balance, December 31, 2007	21,569	$ 22	$ 350,423	$ (342,734)	$ 8	$ 7,719
Exercise of common stock options, warrants and employee stock purchases	1,849	1	10,029			10,030
Issuance of common stock for services	2		22			22
Non-employee stock option expense			398			398
Stock-based compensation			2,628			2,628
Repurchase of common stock	(7)		(95)			(95)
Comprehensive income (loss):						
Unrealized loss on marketable securities					(44)	(44)
Net income				1,509		1,509
Total comprehensive income						1,465
Balance, December 31, 2008	23,413	$ 23	$ 363,405	$ (341,225)	$ (36)	$ 22,167
Exercise of common stock options, warrants and employee stock purchases	70		297			297
Issuance of common stock for services	3		17			17
Non-employee stock option expense			9			9
Stock-based compensation			3,093			3,093
Repurchase of common stock	(7)		(41)			(41)
Comprehensive income (loss):						
Unrealized gain on marketable securities					17	17
Net income				7,546		7,546
Total comprehensive income						7,563
Balance, December 31, 2009	23,479	$ 23	$ 366,780	$ (333,679)	$ (19)	$ 33,105
Sale of common stock and warrants, net of issuance costs	4,071	5	14,084			14,089
Exercise of common stock options, warrants and employee stock	44		132			132

purchases						
Issuance of common stock for services	2		8			8
Non-employee stock option expense			14			14
Stock-based compensation			3,684			3,684
Comprehensive income (loss):						
Unrealized gain on marketable securities					32	32
Net loss				(17,963)		(17,963)
Total comprehensive loss						(17,931)
Balance, December 31, 2010	27,596	$ 28	$ 384,702	$ (351,642)	$ 13	$ 33,101

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

Table of Contents

IDERA PHARMACEUTICALS, INC.

STATEMENTS OF CASH FLOWS

(In thousands)	Years Ended December 31, 2010	2009	2008
Cash Flows from Operating Activities:			
Net (loss) income	$ (17,963)	$ 7,546	$ 1,509
Adjustments to reconcile net (loss) income to net cash (used in) provided by operating activities			
Loss from disposition of assets	2		2
Non-employee stock option expense	14	9	398
Stock-based compensation	3,684	3,093	2,628
Issuance of common stock for services rendered	8	17	22
Amortization of investment premiums	253	40	36
Depreciation expense	546	563	530
Changes in operating assets and liabilities			
Accounts receivable	4,495	(4,023)	(181)
Prepaid expenses and other current assets	139	(154)	218
Accounts payable, accrued expenses, and other liabilities	1,431	(383)	(273)
Deferred revenue	(12,165)	(22,295)	18,675
Net cash (used in) provided by operating activities	(19,556)	(15,587)	23,564
Cash Flows from Investing Activities:			
Purchases of available-for-sale securities	(10,319)	(14,768)	(22,985)
Proceeds from maturity of available-for-sale securities	7,200	10,450	23,620
Decrease in restricted cash	103	102	
Purchases of property and equipment	(92)	(126)	(393)
Net cash (used in) provided by investing activities	(3,108)	(4,342)	242
Cash Flows from Financing Activities:			
Sale of common stock and warrants, net of issuance costs	14,089		
Payments on notes payable			(1,143)
Proceeds from exercise of common stock options, warrants and employee stock purchases	132	297	10,030
Repurchase of common stock		(41)	(95)
Payments on capital lease	(20)	(21)	(21)
Net cash provided by financing activities	14,201	235	8,771
Net (decrease) increase in cash and cash equivalents	(8,463)	(19,694)	32,577
Cash and cash equivalents, beginning of year	25,471	45,165	12,588
Cash and cash equivalents, end of year	$ 17,008	$ 25,471	$ 45,165

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

Table of Contents

IDERA PHARMACEUTICALS, INC.

NOTES TO FINANCIAL STATEMENTS
December 31, 2010

(1) Organization

Idera Pharmaceuticals, Inc. (Idera or the Company) is a biotechnology company engaged in the discovery and development of DNA-and RNA-based drug candidates targeted to Toll-Like Receptors, or TLRs, to treat infectious diseases, autoimmune and inflammatory diseases, cancer, and respiratory diseases, and for use as vaccine adjuvants. Drug candidates are compounds that the Company is developing and that have not been approved for any commercial use. TLRs are specific receptors present in immune system cells that recognize the DNA or RNA of bacteria or viruses and initiate an immune response. Relying on its expertise in DNA and RNA chemistry, the Company has designed and created proprietary TLR agonists and antagonists to modulate immune responses. A TLR agonist is a compound that stimulates an immune response through the targeted TLR. A TLR antagonist is a compound that blocks activation of an immune response through the targeted TLR.

Idera s business strategy is to advance applications of its TLR-targeted drug candidates in multiple disease areas simultaneously. The Company is advancing some of these applications through internal programs, and it seeks to advance other applications through collaborative alliances with pharmaceutical companies. Collaborators provide the necessary resources and drug development experience to advance the Company s compounds in their programs. Upfront payments and milestone payments received from collaborations help to provide the Company with the financial resources for its internal research and development programs.

The Company s internal programs are focused on developing TLR-targeted drug candidates for the potential treatment of infectious diseases, autoimmune and inflammatory diseases, cancer, and respiratory diseases, and for use as vaccine adjuvants.

In addition to its internal programs, the Company is currently collaborating with two pharmaceutical companies to advance other applications of its TLR-targeted compounds. The Company is collaborating with Merck KGaA for the use of TLR9 agonists in cancer treatment, excluding cancer vaccines. Merck KGaA is conducting clinical trials of IMO-2055, a TLR9 agonist, in head and neck cancer, colorectal cancer and non-small cell lung cancer. The Company also is collaborating with Merck Sharp & Dohme Corp. formerly Merck & Co., Inc. which is referred to herein as Merck for the use of TLR7, TLR8, and TLR9 agonists as vaccine adjuvants in the fields of cancer, infectious diseases, and Alzheimer s disease. Merck KGaA and Merck are not related.

At December 31, 2010, the Company had an accumulated deficit of $351.6 million. The Company expects to incur substantial operating losses in future periods. The Company does not expect to generate significant funds or product revenue until it successfully completes development and obtains marketing approval for drug candidates, either alone or in collaborations with third parties, which it expects will take a number of years. In order to commercialize its drug candidates, the Company needs to address a number of technological challenges and to comply with comprehensive regulatory requirements. The Company s research and development expenses were higher in 2010 than in 2009 as a result of increased clinical trial, manufacturing and nonclinical safety study costs associated with IMO-2125, the Company s lead candidate for the treatment of chronic HCV infection, and IMO-3100, the Company s lead candidate for the treatment of autoimmune and Inflammatory diseases, during 2010.

The Company had cash, cash equivalents, and investments of $34.6 million at December 31, 2010. The Company believes that its existing cash, cash equivalents, and investments will be sufficient to fund its operations at least through March 31, 2012 based on the current operating plan, including a Phase 2 clinical trial of IMO-2125 in HCV

patients that the Company plans to initiate in the second quarter of 2011 and nonclinical studies to support the initiation of a Phase 2 clinical trial of IMO-3100 in an initial autoimmune disease indication during this period. The Company expects to need to raise additional funds in order to operate its business beyond March 31, 2012. Additional financing may not be available to the Company when it needs it or may not be available on favorable terms.

Table of Contents

IDERA PHARMACEUTICALS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

The Company is subject to a number of risks and uncertainties similar to those of other companies of the same size within the biotechnology industry, such as uncertainty of clinical trial outcomes, uncertainty of additional funding, and history of operating losses.

(2) Summary of Significant Accounting Policies

(a) Basis of Presentation

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

(b) Reclassification and Additional Disclosures

Certain amounts in the prior year s financial statements have been reclassified and certain additional disclosures have been made to such financial statements.

(c) Cash, Cash Equivalents and Short-Term Investments

The Company considers all highly liquid investments with maturities of 90 days or less when purchased to be cash equivalents. Cash and cash equivalents at December 31, 2010 and 2009 consisted of cash and money market funds.

Management determines the appropriate classification of marketable securities at the time of purchase. Investments that the Company does not have the positive intent to hold to maturity are classified as available-for-sale and reported at fair market value. Unrealized gains and losses associated with available-for-sale investments are recorded in Accumulated other comprehensive income (loss) on the accompanying balance sheets. The amortization of premiums and accretion of discounts, and any realized gains and losses and declines in value judged to be other than temporary, and interest and dividends for all available-for-sale securities are included in Investment income, net on the accompanying statements of operations. Investments that the Company intends to hold to maturity are classified as held-to-maturity investments. The Company had no held-to-maturity investments at either December 31, 2010 or 2009. The cost of securities sold is based on the specific identification method.

The Company had no realized gains or losses from available-for-sale securities in 2010, 2009 or 2008. There were no losses or other-than-temporary declines in value included in Investment income, net for any securities for the three years ended December 31, 2010. The Company had no auction rate securities as of December 31, 2010 and 2009.

(d) Restricted Cash

As part of the Company s lease arrangement for its office and laboratory facility (see Note 10(a)), the Company was required to restrict $619,000 of cash for a security deposit. The restricted cash was reduced by a total of approximately $206,000 upon the second and third anniversaries of the June 2007 lease commencement date. As a result, at December 31, 2010, restricted cash was $413,000. The restricted cash is held in certificates of deposit securing a line of credit for the lessor. The restricted cash is expected to be further reduced by approximately $102,000 upon the fourth anniversary of the lease commencement date, subject to certain conditions. As a result, $102,000 of the

$413,000 has been classified in Prepaid expenses and other current assets.

Table of Contents

IDERA PHARMACEUTICALS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

(e) Depreciation and Amortization

Depreciation and amortization are computed using the straight-line method based on the estimated useful lives of the related assets. Laboratory and other equipment are depreciated over three to five years. Leasehold improvements are amortized over the remaining lease term or the related useful life, if shorter.

(f) Revenue Recognition

An important part of the Company s business strategy is to enter into research and development collaborations with biotechnology and pharmaceutical corporations that bring expertise and resources to the potential research and development and commercialization of drugs based on the Company s technology. Under the Company s research and development collaborations, the Company has generally licensed specified portions of its intellectual property and provided research and development services to the collaborator during the period of continued involvement in the early portion of the collaborations. The collaborators have generally been responsible for drug development activities initiated after the collaboration is effective. The collaborators are also generally responsible for any commercialization activities that may be initiated if any of the drug candidates receive marketing approval from the appropriate regulatory authority.

Under the Company s existing collaborative arrangements, the Company is generally entitled to receive non-refundable license fees, milestone payments, reimbursements of internal and external research and development expenses and patent-related expenses and royalties on product sales. The Company classifies all of these amounts as revenue in its statement of operations since it considers licensing intellectual property and providing research and development and patent-related services to be part of its central business operations. Revenue recognized under the Company s collaborative arrangements is as follows for the years ended December 31, 2010, 2009 and 2008:

	December 31,		
(In thousands)	**2010**	**2009**	**2008**
Merck KGaA	$ 11,173	$ 28,558	$ 16,921
Merck	4,768	5,826	7,458
Novartis	1	19	1,861
Total collaboration revenue	15,942	34,403	26,240
Other revenue	168	115	210
Total alliance revenue	$ 16,110	$ 34,518	$ 26,450

During the years ended December 31, 2010, 2009 and 2008, the Company incurred approximately $26,000, $3,024,000, and $1,778,000, respectively, in third-party expenses in connection with its collaborative arrangements. These third-party expenses are classified as research and development and general and administrative expenses in the Company s statement of operations.

When evaluating multiple element arrangements, the Company considers whether the components of the arrangement represent separate units of accounting. The Company recognizes revenue from non-refundable upfront fees received under collaboration agreements, not specifically tied to a separate earnings process, ratably over the term of the contractual obligation or the Company s estimated continuing involvement under the research collaboration. If the estimated period of continuing involvement is subsequently modified, the period over which the upfront fee is recognized is modified accordingly on a prospective basis.

The Company recognizes revenue from reimbursements earned in connection with research and development collaboration agreements as related research and development costs are incurred, and contractual services are performed, provided collectability is reasonably assured. The Company includes amounts contractually owed to it under these research and development collaboration agreements, including any earned but unbilled receivables, in receivables in its balance sheets. The Company s principal costs under these agreements are generally for its

Table of Contents

IDERA PHARMACEUTICALS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

personnel and related expenses of conducting research and development, as well as for research and development performed by outside contractors or consultants or related research and development materials provided by third parties or for clinical trials it conducts on behalf of a collaborator.

For payments that are specifically associated with a separate earnings process, the Company recognizes revenue when the specific performance obligation is completed. Performance obligations typically consist of significant milestones in the development life cycle of the related technology, such as initiating clinical trials, filing for approval with regulatory agencies, and obtaining approvals from regulatory agencies. The Company recognizes revenue from milestone payments received under collaboration agreements when earned, provided that the milestone event is substantive, its achievability was not reasonably assured at the inception of the agreement, it has no further performance obligations relating to the event, and collectability is reasonably assured. In the event that the agreement provides for payment to be made subsequent to the Company s standard payment terms, the Company recognizes revenue when payment becomes due.

Amounts received prior to satisfying the above revenue recognition criteria are recorded as deferred revenue in the Company s balance sheet. The Company classifies amounts that it expects to recognize in the next twelve months as short-term deferred revenue. The Company classifies amounts that it does not expect to recognize within the next twelve months as long-term deferred revenue.

Although the Company follows detailed guidelines in measuring revenue, certain judgments affect the application of its revenue policy. For example, in connection with its existing collaboration agreements, any deferred revenue the Company has recorded on its balance sheet is classified as short-term and long-term deferred revenue based on its best estimate of when such amounts will be recognized. However, these estimates are based on the Company s collaboration agreements and its then current operating plan and, if either should change, the Company may recognize a different amount of deferred revenue over the subsequent twelve-month period.

The Company s estimate of deferred revenue also reflects management s estimate of the periods of its involvement in its collaborations and the estimated periods over which its performance obligations will be completed. In some instances, the timing of satisfying these obligations can be difficult to estimate. Accordingly, the Company s estimates may change in subsequent periods. Such changes to estimates would result in a change in revenue recognition amounts. If these estimates and judgments change over the course of these agreements, it may affect the timing and amount of revenue that the Company recognizes and records in subsequent periods.

Additional information on the Company s collaborative arrangements is included in Note (8).

(g) Financial Instruments

The fair value of the Company s financial instruments is determined and disclosed in accordance with the three-tier fair value hierarchy specified in note 2(n). The Company is required to disclose the estimated fair values of its financial instruments. The Company s financial instruments consist of cash and cash equivalents, investments and receivables. The estimated fair values of these financial instruments approximate their carrying values as of December 31, 2010 and 2009, respectively. As of December 31, 2010 and 2009, the Company did not have any derivatives, hedging instruments or other similar financial instruments.

(h) Comprehensive Income (Loss)

Comprehensive income (loss) is defined as the change in equity of a business enterprise during a period from transactions and other events and circumstances from non-owner sources. Comprehensive income (loss) for the years ended December 31, 2010, 2009 and 2008 is comprised of reported net income (loss) and the change in net unrealized gains and losses on investments during each year, which is included in Accumulated other comprehensive (loss) income on the accompanying balance sheets.

Table of Contents

IDERA PHARMACEUTICALS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

(i) Net Income (Loss) per Common Share

Basic and diluted net loss per common share is computed using the weighted average number of shares of common stock outstanding during the period. In addition, diluted net income per common share is calculated to give effect of stock options and warrants (where the effect is not antidilutive) resulting in lower net income per share. The dilutive effect of outstanding stock options and warrants is reflected by the application of the treasury stock method, which assumes that the Company uses the proceeds from the sale of dilutive securities to purchase the Company s common stock at the stock s average closing price during the period. Diluted net loss per common share is the same as basic net loss per common share for the year ended December 31, 2010 as the effects of the Company s potential common stock equivalents are antidilutive (see Note 13).

(j) Segment Reporting

The Company views its operations and manages its business as one operating segment. Accordingly, the Company operates in one segment, which is the business of discovering and developing novel therapeutics that modulate immune responses through TLRs. As a result, the financial information disclosed herein represents all of the material financial information related to the Company s principal operating segment. For all of the periods presented, all of the Company s revenues were generated in the United States. As of December 31, 2010 and 2009, all assets were located in the United States.

(k) Stock-Based Compensation

The Company recognizes all share-based payments to employees and directors in the financial statements based on their fair values. The Company records compensation expense over an award s requisite service period, or vesting period, based on the award s fair value at the date of grant. The Company s policy is to charge the fair value of stock options as an expense on a straight-line basis over the vesting period, which is generally four years for employees and three years for directors. The Company included charges of $3,684,000, $3,093,000, and $2,628,000 in its statements of operations for the years ended December 31, 2010, 2009 and 2008, respectively, representing the stock compensation expense attributable to share-based payments made to employees and directors.

The fair value of each option award is estimated on the date of grant using the Black-Scholes option-pricing model and expensed over the requisite service period on a straight-line basis. The following assumptions apply to the 1,087,000, 1,128,000, and 1,336,000 options granted to employees and directors during the years ended December 31, 2010, 2009 and 2008:

	2010	2009	2008
Average risk free interest rate	2.1%	2.5%	2.4%
Expected dividend yield			
Expected lives (years)	4.9	5.0	4.9
Expected volatility	68%	66%	66%
Weighted average grant date fair value of options granted during the period (per share)	$ 1.69	$ 3.07	$ 6.28
	$ 2.95	$ 5.39	$ 11.18

Weighted average exercise price of options granted during the period (per share)

The expected lives of the options and the expected volatility are based on historical experience. All options granted during the three years ended December 31, 2010 were granted at exercise prices equal to the fair market value of the common stock on the dates of grant.

The adoption of policies with respect to the treatment of stock options in the event of director or employee retirement during 2010 resulted in the modification of stock options by accelerating the vesting of nonvested stock options held by, and by extending the post-retirement period during which stock options may be exercised by, those

Table of Contents

IDERA PHARMACEUTICALS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

directors and employees whose retirement qualifies under the terms of the policy. The stock option modifications increased the fair value of those options by $111,000 when modified, of which $104,000 was expensed during 2010. As a result of the stock option modifications, the Company recognized an additional $197,000 of stock-based compensation expense during 2010, including the $104,000 attributable to the increase in fair value and $93,000 which resulted from the accelerated recognition of the original fair value of options held by directors who are or will become eligible for retirement prior to the completion of the option vesting period, which would otherwise have been expensed over the vesting period on a straight line basis.

The intrinsic value of options exercised amounted to $81,000 and $2,244,000 during 2009 and 2008, respectively. The fair value of options that vested amounted to $3,915,000, $3,461,000, and $2,896,000 during 2010, 2009 and 2008, respectively. As of December 31, 2010, there was $5,896,000 of unrecognized compensation cost related to nonvested stock-based compensation arrangements, which is expected to be recognized over a weighted average period of 2.7 years.

The Company also awarded non-employee, non-director stock options to purchase 10,000 and 87,250 shares of common stock during 2009 and 2008, respectively. No such stock options were awarded in 2010. These options had Black-Scholes fair values of $58,000 and $1,055,000 at the time of grant during 2009 and 2008, respectively based on the following assumptions:

	2009	2008
Average risk free interest rate	3.7%	3.9%
Expected dividend yield		
Expected lives (years)	10.0	10.0
Expected volatility	88%	94%

The fair value of the nonvested portion of the non-employee, non-director options is remeasured each quarter. This remeasured fair value is partially expensed each quarter based upon the percentage of the nonvested portion of the option s vesting period that has elapsed to date less the amount expensed in prior periods. The Company recorded approximately $14,000, $9,000, and $398,000 as an expense for non-employee, non-director options in 2010, 2009 and 2008, respectively.

There was approximately $59,000, $56,000, and $53,000 in compensation expense related to the Company s 1995 Employee Stock Purchase Plan during 2010, 2009 and 2008, respectively. This expense was computed based on the Black-Scholes option pricing model and the following assumptions:

	2010	2009	2008
Average risk free interest rate	0.1%	0.2%	2.1%
Expected dividend yield			
Expected lives (months)	3.0	3.0	3.0
Expected volatility	60%	68%	70%

During 2007, the Company awarded 62,500 shares of restricted common stock to an employee, which vested in three equal annual installments over the three years ended December 31, 2010. The stock s $441,000 fair market value on the date of the grant was amortized over the three-year vesting period. The Company expensed $73,000, $147,000 and $147,000 of amortization during 2010, 2009 and 2008, respectively

(l) Research and Development Expenses

All research and development expenses, including amounts funded by research collaborations, are expensed as incurred. Research and development expenses are comprised of costs incurred in performing research and development activities, including drug development trials and studies, drug manufacturing, laboratory supplies, external research, payroll including stock-based compensation and overhead. In 2009 and 2008, Merck KGaA

Table of Contents

IDERA PHARMACEUTICALS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

sponsored approximately $3.1 million and $1.4 million of the Company s research and development activities. In 2009 and 2008, Merck sponsored approximately $0.8 million and $1.5 million, respectively, of the Company s research and development activities. Sponsored research and development activities were diminutive in 2010.

(m) Concentration of Credit Risk

Financial instruments that subject the Company to credit risk primarily consist of cash and cash equivalents and investments. The Company s credit risk is managed by investing its cash and cash equivalents and marketable securities in highly rated money market instruments, certificates of deposit, corporate bonds, and debt securities. Due to these factors, no significant additional credit risk is believed by management to be inherent in the Company s assets. As of December 31, 2010, all of the Company s cash, cash equivalents, and investments are held at one financial institution.

(n) Fair Value of Assets and Liabilities

The Company measures fair value at the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date using assumptions that market participants would use in pricing the asset or liability (the inputs) into a three-tier fair value hierarchy. This fair value hierarchy gives the highest priority (Level 1) to quoted prices in active markets for identical assets or liabilities and the lowest priority (Level 3) to unobservable inputs in which little or no market data exists, requiring companies to develop their own assumptions. Observable inputs that do not meet the criteria of Level 1, and include quoted prices for similar assets or liabilities in active markets or quoted prices for identical assets and liabilities in markets that are not active, are categorized as Level 2. Level 3 inputs are those that reflect the Company s estimates about the assumptions market participants would use in pricing the asset or liability, based on the best information available in the circumstances. Valuation techniques for assets and liabilities measured using Level 3 inputs may include unobservable inputs such as projections, estimates and management s interpretation of current market data. These unobservable Level 3 inputs are only utilized to the extent that observable inputs are not available or cost-effective to obtain.

The table below presents the assets and liabilities measured at fair value on a recurring basis at December 31, 2010 and 2009 categorized by the level of inputs used in the valuation of each asset and liability.

Table of Contents

IDERA PHARMACEUTICALS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

(In thousands)	Total	Quoted Prices in Active Markets for Identical Assets or Liabilities (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
December 31, 2010				
Assets				
Money market funds	$ 14,789	$ 14,789	$	$
Other cash equivalents	2,008		2,008	
Short-term investments	17,635	11,216	6,419	
Long-term investments				
Total Assets	$ 34,432	$ 26,005	$ 8,427	$
Liabilities	$	$	$	$
December 31, 2009				
Assets				
Money market funds	$ 25,426	$ 25,426	$	$
Short-term investments	6,270	1,993	4,277	
Long-term investments	8,466	7,214	1,252	
Total Assets	$ 40,162	$ 34,633	$ 5,529	$
Liabilities	$	$	$	$

The Level 1 assets consist of money market funds and U.S. Government bond investments, both of which are actively traded daily. The Level 2 assets consist of federal agency bond investments whose fair value is generally determined from quoted market prices received from pricing services based upon quoted prices from active markets and/or other significant observable market transactions at fair value. Since these prices may not represent actual transactions of identical securities, they are classified as Level 2. Since all investments are classified as available-for-sale securities, any unrealized gains or losses are recorded in other comprehensive gains or losses in the equity section of the balance sheet. The Company did not elect to measure any other financial assets or liabilities at fair value.

(o) New Accounting Pronouncements

In October 2009, the Financial Accounting Standards Board, or FASB, issued Accounting Standard Update No. 2009-13, Multiple-Element Revenue Arrangements (ASU No. 2009-13), which updates the existing multiple-element revenue arrangements guidance currently included in Accounting Standards Codification No. 605-25

in two ways. The first change relates to the determination of when the individual deliverables included in a multiple-element arrangement may be treated as separate units of accounting. This is significant as it will likely result in the requirement to separate more deliverables within an arrangement, ultimately leading to less revenue deferral. The second change modifies the manner in which the transaction consideration is allocated across the separately identified deliverables. ASU No. 2009-13 also significantly expands the disclosures required for multiple-element revenue arrangements. ASU No. 2009-13 will be effective for the first annual reporting period beginning on or after June 15, 2010, and may be applied retrospectively for all periods presented or prospectively to arrangements entered into or materially modified after the adoption date. Since the Company s period of continuing involvement in the research portions of its current collaboration agreements was completed during 2010 and since all of the up-front payments received under these collaborations have been fully amortized as of December 31,

Table of Contents

IDERA PHARMACEUTICALS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

2010, ASU No. 2009-13 will have no effect on the Company s financial position and results of operations through December 31, 2010. The Company is currently evaluating the effect that ASU No. 2009-13 may have on its policy for recognizing revenue under any future collaboration agreements.

In April 2010, the FASB issued Accounting Standard Update No. 2010-17, Milestone Method of Revenue Recognition (ASU No. 2010-17), which provides guidance on defining a milestone and determining when it may be appropriate to apply the milestone method of revenue recognition for research or development transactions. Prior to the issuance of ASU No. 2010-17, authoritative guidance on the use of the milestone method did not exist. ASU No. 2010-17 is effective on a prospective basis for milestones achieved in fiscal years, and interim periods within those years, beginning on or after June 15, 2010 with early adoption permitted. Alternatively, ASU No. 2010-17 can be adopted retrospectively for all prior periods. Since the Company has not elected early adoption and does not intend to elect retrospective adoption, ASU No. 2010-17 will have no effect on the Company s financial position and results of operations through December 31, 2010. The Company is currently evaluating the effect that ASU No. 2010-17 may have on its policy for recognizing revenue on any milestones that it receives in future periods.

(3) Marketable Securities

The Company s available-for-sale investments at market value consisted of the following at December 31, 2010 and 2009:

	December 31, 2010			
	Cost	Gross Unrealized (Losses)	Gross Unrealized Gains	Estimated Fair Value
	(In thousands)			
Agency bonds due in one year or less	$ 3,201	$	$	$ 3,201
Corporate bonds due in one year or less	3,214		4	3,218
U.S. government bonds due in one year or less	11,207		9	11,216
Total investments	$ 17,622	$	$ 13	$ 17,635

	December 31, 2009			
	Cost	Gross Unrealized (Losses)	Gross Unrealized Gains	Estimated Fair Value
	(In thousands)			
Agency bonds due in one year or less	$ 4,283	$ (6)	$	$ 4,277
U.S. government bonds due in one year or less	1,994	(1)		1,993
Total short-term investments	6,277	(7)		6,270

Agency bonds due in one year or more	1,256	(4)		1,252
U.S. government bonds due in one year or more	7,222	(8)		7,214
Total long-term investments	8,478	(12)		8,466
Total investments	$ 14,755	$ (19)	$	$ 14,736

The Company had no long-term investments at December 31, 2010.

See Note 2 (g) and 2(n).

Table of Contents

IDERA PHARMACEUTICALS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

(4) Property and Equipment

At December 31, 2010 and 2009, net property and equipment at cost consisted of the following:

	December 31, 2010	2009
	(In thousands)	
Leasehold improvements	$ 515	$ 514
Laboratory equipment and other	2,889	2,811
Total property and equipment, at cost	3,404	3,325
Less: Accumulated depreciation	2,474	1,938
Property and equipment, net	$ 930	$ 1,387

As of December 31, 2010 and 2009, laboratory equipment and other included approximately $79,000 of office equipment financed under capital leases with accumulated depreciation of approximately $56,000 and $41,000, respectively.

Depreciation expense, which includes amortization of assets recorded under capital leases, was approximately $546,000, $563,000 and $530,000 in 2010, 2009 and 2008, respectively.

In 2010 and 2008, the Company wrote off unused property and equipment that had a gross cost of approximately $12,000 and $200,000, respectively, and the write-off of property and equipment resulted in a loss of approximately $2,000 in each year. In 2009, the Company wrote off unused property and equipment that had a gross cost and accumulated depreciation of approximately $9,000 resulting in no gain or loss.

(5) Accrued Expenses

At December 31, 2010 and 2009, accrued expenses consisted of the following:

	December 31, 2010	2009
	(In thousands)	
Payroll and related costs	$ 164	$ 88
Clinical and nonclinical trial expenses	1,204	332
Professional and consulting fees	286	226
Other	121	285
	$ 1,775	$ 931

(6) Note Payable

In June 2007, the Company executed a promissory note in the aggregate principal amount of $1,278,000 (the Note) in favor of General Electric Capital Corporation (GE). The Note was fully secured by specific laboratory, manufacturing, office and computer equipment and was subject to the terms of a master security agreement dated April 23, 2007 by and between the Company and GE. The Note bore interest at a fixed rate of 11% per annum, and was payable in 48 consecutive monthly installments of principal and accrued interest, with the first installment having been paid out of the proceeds of the borrowing.

In March 2008, the Company paid approximately $1,189,000 to GE as payment in full of all obligations outstanding under the Note. The payment represented approximately $1,121,000 of principal plus accrued interest through the date of payment of approximately $12,000 and a prepayment premium of approximately $56,000. Upon payment, the Note was cancelled.

Table of Contents

IDERA PHARMACEUTICALS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

(7) Unrealized Losses

Investments with unrealized losses are those investments whose cost exceeds market value. As of December 31, 2009, the Company had investments with unrealized losses as follows:

(In thousands)	Investments in Continuous Unrealized Loss Positions for Less than 12 Months	More than 12 Months	Total Investments in Unrealized Loss Position
Short-term investments at December 31, 2009			
Aggregate fair value of investments with unrealized losses (includes accrued interest of $6)	$ 6,276	$	$ 6,276
Aggregate amount of unrealized losses	$ 7	$	$ 7
Long-term investments at December 31, 2009			
Aggregate fair value of investments with unrealized losses (includes accrued interest of $36)	$ 6,297	$	$ 6,297
Aggregate amount of unrealized losses	$ 12	$	$ 12

The Company had no unrealized losses on investments at December 31, 2010.

(8) Collaboration and License Agreements

(a) Collaboration and License Agreement with Merck KGaA

In December 2007, the Company entered into an exclusive, worldwide license agreement with Merck KGaA to research, develop and commercialize products containing its TLR9 agonists for the treatment of cancer, excluding cancer vaccines, which became effective February 4, 2008. Under the terms of the agreement, Idera granted Merck KGaA worldwide exclusive rights to its lead TLR9 agonists, IMO-2055 and IMO-2125, and to a specified number of novel, follow-on TLR9 agonists to be identified by Merck KGaA and the Company under a research collaboration, for use in the treatment, cure and/or delay of the onset or progression of cancer in humans. Under the terms of the agreement: Merck KGaA paid the Company in February 2008 a $40.0 million upfront license fee in Euros of which $39.7 million was received due to foreign currency exchange rates in effect at that time; Merck KGaA agreed to reimburse future development costs for certain of the Company s IMO-2055 clinical trials for the period in which Idera continued to conduct the trials on behalf of Merck KGaA; Merck KGaA agreed to pay up to 264 million in development, regulatory approval, and commercial success milestone payments if products containing the Company s TLR9 agonist compounds are successfully developed and marketed for treatment, cure and/or delay of the onset or

progression of cancer in humans; and Merck KGaA agreed to pay mid single-digit to low double digit royalties on net sales of products containing the Company s TLR9 agonists that are marketed. Merck KGaA refers to IMO-2055 as EMD 1201081. In February 2009, the agreement was amended so that the Company could initiate and conduct on behalf of Merck KGaA additional clinical trials of EMD 1201081 until such time as Merck KGaA had filed an Investigational New Drug (IND) application with the U.S. Food and Drug Administration (FDA) and assumed sponsorship of these trials. Under the amendment, Merck KGaA agreed to reimburse the Company for costs associated with any additional trials that the Company initiated and conducted. Merck KGaA filed an IND and, as of March 2010, Merck KGaA assumed sponsorship of all ongoing clinical trials of EMD 1201081, for the treatment of cancer, and has assumed responsibility for all further clinical development of EMD 1201081 in the treatment of cancer, excluding vaccines.

The Company recognized the $40.0 million upfront payment as revenue over the twenty-eight month term that ended in June 2010, which was the Company s period of continuing involvement under the research collaboration.

Table of Contents

IDERA PHARMACEUTICALS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

The Company recognized $4.0 million of milestone revenue in the second quarter of 2009 related to the initiation of a Phase 1b clinical trial of EMD 1201081 in patients with colorectal cancer, which was the period in which payment was due under its collaboration with Merck KGaA. In the fourth quarter of 2009, the Company recognized $4.3 million of milestone revenue related to the initiation by Merck KGaA of a Phase 2 clinical trial of EMD 1201081 in treatment of patients with recurrent or metastatic squamous cell carcinoma of the head and neck. In the third quarter of 2010, the Company recognized $3.8 million of milestone revenue related to the initiation by Merck KGaA of a Phase 1b clinical trial of EMD 1201081 in treatment of patients with squamous cell carcinoma of the head and neck.

(b) Collaboration and License Agreement with Merck Sharp & Dohme Corp.

In December 2006, the Company entered into an exclusive, worldwide license and research collaboration agreement with Merck to research, develop, and commercialize vaccine products containing the Company s TLR7, 8, and 9 agonists in the fields of cancer, infectious diseases, and Alzheimer s disease. Under the terms of the agreement, the Company granted Merck exclusive rights to a number of the Company s TLR7, 8, and 9 agonists for use in combination with Merck s therapeutic and prophylactic vaccines under development in the fields of cancer, infectious diseases, and Alzheimer s disease. The Company also agreed with Merck to engage in a two-year research collaboration to generate novel agonists targeting TLR7 and TLR8 incorporating both Merck and Idera chemistry for use in vaccines in the defined fields, which collaboration was extended by Merck for two additional one-year periods. Under the terms of the agreement: Merck paid the Company a $20.0 million upfront license fee; Merck purchased $10.0 million of the Company s common stock at $5.50 per share; and Merck agreed to fund the research and development collaboration. Merck also agreed to pay the Company milestone payments as follows: up to $165.0 million if vaccines containing the Company s TLR9 agonist compounds are successfully developed and marketed in each of the oncology, infectious disease, and Alzheimer s disease fields; up to $260.0 million if vaccines containing the Company s TLR9 agonist compounds are successfully developed and marketed for follow-on indications in the oncology field and if vaccines containing the Company s TLR7 or TLR8 agonists are successfully developed and marketed in each of the oncology, infectious disease, and Alzheimer s disease fields; and if Merck develops and commercializes additional vaccines using the Company s agonists, the Company would be entitled to receive additional milestone payments. In addition, Merck agreed to pay the Company mid to upper single-digit royalties on net product sales of vaccines using the Company s TLR agonist technology that are developed and marketed.

The Company recognized the $20.0 million upfront payment as revenue over four years, including the initial two-year research term and the additional two-year research term that ended in December 2010, which was the Company s period of continuing involvement under the research collaboration.

In December 2006, in connection with the execution of the license and collaboration agreement, the Company entered into a stock purchase agreement with Merck. Pursuant to such stock purchase agreement, the Company issued and sold to Merck 1,818,182 shares of the Company s common stock for a price of $5.50 per share resulting in aggregate gross proceeds of $10.0 million.

In May 2008, under the Company s collaboration with Merck, a preclinical milestone was achieved with one of its novel TLR9 agonists used as an adjuvant in cancer vaccines. As a result, the Company received a $1.0 million milestone payment from Merck, which it recognized as revenue in 2008.

(c) Collaboration and License Agreement with Novartis International Pharmaceutical, Ltd.

In May 2005, the Company entered into a research collaboration and option agreement and a separate license, development, and commercialization agreement with Novartis to discover, develop, and commercialize TLR9 agonists that are identified as potential treatments for asthma and allergy. Under the terms of the agreements, Novartis paid the Company a $4.0 million upfront license fee and agreed to fund substantially all research activities under the research collaboration. In 2007, Novartis extended the research collaboration by an additional year until

Table of Contents

IDERA PHARMACEUTICALS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

May 2008. In connection with this extension, Novartis paid the Company an additional license fee of $1.0 million. As a result of the initiation of a Phase 1 clinical study by Novartis under the research collaboration, the Company received a $1.0 million milestone payment from Novartis in October 2008.

In November 2009, Novartis notified the Company that it was terminating the research collaboration and option agreement, effective as of February 2010. This termination canceled Novartis option to implement the license, development, and commercialization agreement. Upon the termination, the Company regained rights to QAX935, a novel agonist of TLR9 which the Company refers to as IMO-2134, without any financial obligations to Novartis. The Company is no longer subject to restrictions under the collaboration on its right to develop TLR-targeted compounds, including TLR antagonist and TLR antisense compounds, as potential treatments for human allergic and/or respiratory diseases. Sponsorship of the clinical trial initiated by Novartis and data from the clinical trial have not been transferred to the Company.

(d) Other License Agreements

The Company has out-licensed and in-licensed therapies related to antisense technology. In 2001 the Company entered into an agreement with Isis Pharmaceuticals, Inc., under which it granted Isis a license, with the right to sublicense, to its antisense chemistry and delivery patents and patent applications; and it retained the right to use these patents and applications in its own drug discovery and development efforts and in collaborations with third parties. During 2001, Isis paid the Company $15.0 million in cash and issued 857,143 shares of its common stock having an aggregate fair market value on the dates on which title to the shares was received of $17.3 million and is required to pay the Company a low to mid double-digit percentage of specified sublicense income it receives from some types of sublicenses of its patents and patent applications. To date, the Company has received $0.3 million in sublicense income from Isis. Also under the agreement, the Company licensed from Isis specified antisense patents and patent applications, principally Isis suite of RNase H patents and patent applications. The Company also paid to Isis $0.7 million and issued 1,005,499 shares of common stock having a fair market value of approximately $1.2 million on the date of issuance for this license and is obligated to pay Isis an annual maintenance fee and low single-digit royalties on net sales of antisense products sold that are covered by Isis s patent rights. The Company has the right to use these patents and patent applications in its drug discovery and development efforts and in some types of third-party collaborations. To date, the Company has only paid Isis annual maintenance fees and has not paid any royalties. The agreement may be terminated for an uncured material breach by either party. The licenses granted under the Isis agreement terminate upon the last to expire of the patents and patent applications licensed under the agreement. The Company may terminate at any time the sublicense by Isis to it of the patents and patent applications.

In addition, the Company is a party to two other license agreements involving the license of its antisense patents and patent applications for oligonucleotide chemistry and delivery and for specific gene targets, under which the Company typically is entitled to receive license fees, sublicensing income, research payments, payments upon achievement of developmental milestones, and royalties on product sales.

The Company s principal in-license related to antisense technology is with University of Massachusetts Medical Center for antisense chemistry and for certain gene targets. Under the terms of the license agreement with University of Massachusetts Medical Center, the Company is the worldwide, exclusive licensee under a number of U.S. issued patents and various patent applications owned by University of Massachusetts Medical Center relating to the chemistry of antisense oligonucleotides and their use. Many of these patents and patent applications have corresponding applications on file or corresponding patents in other major industrial countries. The patents licensed to

the Company by University of Massachusetts Medical Center expire at dates ranging from 2006 to 2019. This license expires upon the expiration of the last to expire of the patents covered by the license. Under the agreement, the Company has agreed to pay a low single-digit royalty on net product sales, a low double-digit percentage of any sublicense license income received, and a small annual license maintenance fee. The Company has paid approximately $1.7 million to University of Massachusetts Medical Center under this license agreement.

Table of Contents

IDERA PHARMACEUTICALS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

Additionally, the Company has entered into six other royalty-bearing license agreements under which it has acquired rights to antisense related patents, patent applications, and technology. Under all of these in-licenses, the Company is obligated to pay low to mid single-digit royalties on its net sales of products or processes covered by a valid claim of a licensed patent or patent application. Under some of these in-licenses, the Company is required to pay a low double-digit specified percentage of any sublicense income, and all of these in-licenses impose various commercialization, sublicensing, insurance, and other obligations on us, and its failure to comply with these requirements could result in termination of the in-licenses.

(9) Stockholders Equity

(a) Common Stock

Pursuant to the terms of a unit purchase agreement dated as of May 5, 1998, the Company issued and sold a total of 1,199,684 shares of common stock (the Put Shares) at a price of $16.00 per share. Under the terms of the unit purchase agreement, the initial purchasers (the Put Holders) of the Put Shares have the right (the Put Right) to require the Company to repurchase the Put Shares. The Put Right may not be exercised by any Put Holder unless: 1) the Company liquidates, dissolves or winds up its affairs pursuant to applicable bankruptcy law, whether voluntarily or involuntarily; 2) all of the Company s indebtedness and obligations, including without limitation the indebtedness under the Company s then outstanding notes, has been paid in full; and 3) all rights of the holders of any series or class of capital stock ranking prior and senior to the common stock with respect to liquidation, including without limitation the Series A convertible preferred stock, have been satisfied in full. The Company may terminate the Put Right upon written notice to the Put Holders if the closing sales price of its common stock exceeds $32.00 per share for the twenty consecutive trading days prior to the date of notice of termination. Because the Put Right is not transferable, in the event that a Put Holder has transferred Put Shares since May 5, 1998, the Put Right with respect to those shares has terminated. As a consequence of the Put Right, in the event the Company is liquidated, holders of shares of common stock that do not have Put Rights with respect to such shares may receive smaller distributions per share upon the liquidation than if there were no Put Rights outstanding.

As of December 31, 2010, the Company has repurchased or received documentation of the transfer of 399,950 Put Shares and 35,780 of the Put Shares continued to be held in the name of Put Holders. The Company cannot determine at this time what portion of the Put Rights of the remaining 763,954 Put Shares have terminated.

(b) Warrants

The Company has the following warrants outstanding and exercisable for the purchase of common stock at December 31, 2010:

Expiration Date	Shares	Weighted Average Exercise Price Per share
September 24, 2011	2,466,263	$ 5.42
August 5, 2015	1,628,402	3.71

Total	4,094,665	4.74

(c) Stock Options

Under the 2008 Stock Incentive Plan, the Company may grant options to purchase common stock, stock appreciation rights, restricted stock awards and other forms of stock-based compensation. Stock options generally vest over three to four years, and expire no later than 10 years from the date of grant. A total of 3,700,000 shares of common stock may be issued pursuant to awards granted under the plan subject to reduction in the event that there are any full-value awards, as defined in the plan. The maximum number of shares of common stock with respect to which awards may be granted to any participant under the plan is 500,000 per calendar year. The Compensation

Table of Contents

IDERA PHARMACEUTICALS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

Committee of the Board of Directors has the authority to select the employees to whom options are granted and determine the terms of each option, including (i) the number of shares of common stock subject to the option; (ii) when the option becomes exercisable; (iii) the option exercise price, which must be at least 100% (110% in the case of incentive stock options granted to those holding 10% or more of the voting power of the Company) of the fair market value of the common stock as of the date of grant and (iv) the duration of the option, which may not exceed 10 years. Stock options may not be re-priced without shareholder approval. Discretionary awards to non-employee directors are granted and administered by a committee comprised of independent directors. As of December 31, 2010, options to purchase a total of 2,771,487 shares of common stock remained outstanding under the 2008 Stock Incentive Plan. As of December 31, 2010, 922,923 shares of common stock remain available for grant under the 2008 Stock Incentive Plan.

The Company is no longer granting stock options or other awards pursuant to the share-based compensation plans that were utilized prior to the approval of the 2008 Stock Incentive Plan. Under these earlier plans, stock options generally vested over three to four years, and expired no later than 10 years from the date of grant. As of December 31, 2010, options to purchase a total of 2,298,742 shares of common stock were outstanding under these plans.

The Company s share-based compensation plans have been approved by the Company s stockholders. In 2001, the Company also granted options to purchase shares of Common Stock pursuant to agreements outside of these plans that were not approved by stockholders.

The following table summarizes information related to the outstanding and exercisable options during 2010 (in thousands, except per share amounts and years):

	Stock Options	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Life (in years)	Aggregate Intrinsic Value
Outstanding at December 31, 2009	4,565	$ 7.34		
Granted	1,087	2.95		
Exercised				
Forfeited	(93)	6.88		
Expired	(164)	8.65		
Outstanding at December 31, 2010	5,395	6.42	6.80	$ 142
Exercisable at December 31, 2010	3,136	7.30	5.12	
Total exercisable or expected to vest	5,241	6.46	6.73	133

(d) Employee Stock Purchase Plan

The 1995 Employee Stock Purchase Plan (the Stock Purchase Plan) was adopted in October 1995 and amended in June 2003 and June 2008. Under the Stock Purchase Plan, up to 250,000 shares of common stock may be issued to participating employees of the Company or its subsidiaries. Participation is limited to employees that would not own 5% or more of the total combined voting power or value of the stock of the Company after the grant.

Under the Stock Purchase Plan, on the first day of a designated payroll deduction period, the Offering Period , the Company will grant to each eligible employee who has elected to participate in the Stock Purchase Plan an option to purchase shares of common stock as follows: the employee may authorize an amount, a whole percentage from 1% to 10% of such employee s regular pay, to be deducted by the Company from such pay during the Offering Period. On the last day of the Offering Period, the employee is deemed to have exercised the option, at the option exercise price, to the extent of accumulated payroll deductions. Under the terms of the Stock Purchase Plan, the option price is an amount equal to 85% of the fair market value per share of the common stock on either the

Table of Contents

IDERA PHARMACEUTICALS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

first day or the last day of the Offering Period, whichever is lower. In no event may an employee purchase in any one Offering Period a number of shares that is more than 15% of the employee s annualized base pay divided by 85% of the market value of a share of common stock on the commencement date of the Offering Period. The Compensation Committee may, in its discretion, choose an Offering Period of 12 months or less for each of the Offerings and choose a different Offering Period for each Offering.

Offering periods are three months in duration and commence on March 1, June 1, September 1, and December 1. In 2010, 2009, and 2008, the Company issued 43,496, 28,074, and 11,926 shares of common stock, respectively, under the Stock Purchase Plan.

(e) Preferred Stock

The Restated Certificate of Incorporation of the Company permits its Board of Directors to issue up to 5,000,000 shares of preferred stock, par value $0.01 per share, in one or more series, to designate the number of shares constituting such series, and fix by resolution, the powers, privileges, preferences and relative, optional or special rights thereof, including liquidation preferences and dividends, and conversion and redemption rights of each such series. The Company has designated 1,500,000 shares as Series A convertible preferred stock. As of December 31, 2010 and 2009, there were 655 shares of Series A convertible preferred stock outstanding.

As discussed in Note (15), the Company has designated Series C junior participating preferred stock in connection with its shareholder rights plan. During 2002, the Company designated 100,000 shares of Series C junior participating preferred stock. The Company designated an additional 50,000 shares of Series C junior participating preferred stock in each of the years 2003 and 2005. There were no shares of Series C junior participating preferred stock issued or outstanding at either December 31, 2010 or 2009.

(f) Series A Convertible Preferred Stock

The dividends on the Series A Convertible Preferred Stock are payable semi-annually in arrears at the rate of 1% per annum, at the election of the Company, either in cash or additional duly authorized, fully paid and nonassessable shares of Series A preferred stock. The Company paid dividends in stock until 2004 when it elected to pay in cash. In the event of liquidation, dissolution or winding up of the Company, after payment of debts and other liabilities of the Company, the holders of the Series A convertible preferred stock then outstanding will be entitled to a distribution of $1 per share out of any assets available to shareholders. The Series A preferred stock is non-voting. All remaining shares of Series A preferred stock rank as to payment upon the occurrence of any liquidation event senior to the common stock. Shares of Series A preferred stock are convertible, in whole or in part, at the option of the holder into fully paid and nonassessable shares of common stock at $34.00 per share, subject to adjustment.

(10) Commitments and Contingencies

(a) Lease Commitments

In June 2007, the Company relocated its operations to a newly leased facility. The Company entered into a lease arrangement on October 31, 2006 for the new facility and the term of the lease commenced on June 1, 2007 and will terminate on May 31, 2014, with one five-year renewal option exercisable by the Company. During 2010, 2009 and 2008, rent expense, including real estate taxes, was $1,531,000, $1,467,000, and $1,576,000, respectively. As part of

the lease, the Company was required to restrict approximately $619,000 of cash for a security deposit of which $413,000 remains restricted as of December 31, 2010. The lease is classified as an operating lease. Total

Table of Contents

IDERA PHARMACEUTICALS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

payments over the seven-year term of the lease are approximately $9.0 million. Future minimum commitments as of December 31, 2010 under the Company s lease agreement are approximately:

December 31,	Operating Lease (In thousands)
2011	$ 1,391
2012	1,436
2013	1,483
2014	626
	$ 4,936

(b) External Collaborations

The Company is a party to seven royalty-bearing license agreements under which it has acquired rights to antisense related patents, patent applications, and technology. Each of these in-licenses automatically terminates upon the expiration of the last to expire patent included in the license. The Company has annual minimum payments due under these agreements of $35,000.

(c) Contract Obligations

The Company has an employment agreement, which expires October 2013, with its chairman, president, and chief executive officer. As of December 31, 2010, future minimum commitments under this agreement are approximately $549,000 for each of the years ended December 31, 2011, and 2012, respectively, and $440,000 for the year ended December 31, 2013.

(d) Related-Party Transactions

The Company paid directors consulting fees of approximately $53,000, $16,000 and $101,000 in 2010, 2009 and 2008, respectively. The Company issued common stock in lieu of Director board and committee fees of approximately $6,000, $7,000, and $7,000 during 2010, 2009 and 2008, respectively.

(11) Income Taxes

Subject to the limitations described below, at December 31, 2010, the Company had cumulative net operating loss carryforwards (NOLs) of approximately $239.5 million and $44.9 million available to reduce federal and state taxable income which expire through 2030. In addition, the Company had cumulative federal and state tax credit carryforwards of $5.7 million and $4.8 million, respectively, available to reduce federal and state income taxes which expire through 2030 and 2025, respectively. The NOLs include approximately $1.9 million of deductions related to the exercise of stock options subsequent to the adoption of Accounting Standards Codification (ASC) 718 Stock Compensation. This amount represents an excess tax benefit as defined under ASC 718 and has not been included in

the gross deferred tax asset reflected for NOLs.

The Tax Reform Act of 1986 contains provisions, which limit the amount of net operating loss and credit carryforwards that companies may utilize in any one year in the event of cumulative changes in ownership over a three-year period in excess of 50%. The Company has completed several financings since the effective date of the Tax Reform Act of 1986, which as of December 31, 2010, have resulted in ownership changes in excess of 50%, and that will significantly limit the Company s ability to utilize its NOL and tax credit carryforwards. For example, based on a 2009 study, the Company estimated that between 30% and 45% of the $249.3 million in federal NOLs at December 31, 2009 could be utilized to offset federal taxable income and approximately 66% of the $5.4 million of federal tax credit carryforwards at December 31, 2009 could be used to offset federal income taxes. Ownership

Table of Contents

IDERA PHARMACEUTICALS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

changes in future periods may place additional limits on the Company s ability to utilize NOLs and tax credit carryforwards.

As of December 31, 2010 and 2009, the components of the deferred tax assets are approximately as follows:

	2010	2009
	(In thousands)	
Operating loss carryforwards	$ 83,040	$ 85,655
Tax credit carryforwards	8,844	8,487
Other	3,292	7,164
	95,176	101,306
Valuation allowance	(95,176)	(101,306)
	$	$

The Company has provided a valuation allowance for its deferred tax asset due to the uncertainty surrounding the ability to realize this asset. The valuation allowance in the current year has decreased by approximately $6.1 million which is attributable to a decrease in deferred tax assets associated with the expiration of NOLs. The decrease in the operating loss carryforwards deferred tax assets, shown in the above table, is due to expiring NOLs. The decrease in other deferred tax assets is due to the inclusion, in the 2010 Statement of Operations loss, of revenue that had been recognized for tax purposes in prior years.

The difference between the 34% U.S. federal corporate tax rate and the Company s effective tax rate is as follows for the years ended December 31, 2010, 2009 and 2008:

	2010	2009	2008
Expected federal income tax rate	(34.0)%	34.0%	34.0%
Expiring credits and NOLs	74.2	67.3	269.7
Change in valuation allowance	(34.1)	(111.4)	(301.2)
Federal credits	(6.4)	(11.6)	(36.0)
State income taxes, net of federal benefit	(4.8)	6.3	3.8
Permanent differences	2.6	5.8	22.1
State rate change	0.3	6.4	
Other	2.2	2.6	6.0
Effective tax rate	0.0%	(0.6)%	(1.6)%

The Company applies ASC 740-10 *Accounting for Uncertainty in Income Taxes, an interpretation of ASC 740*. ASC 740-10 clarifies the accounting for uncertainty in income taxes recognized in financial statements and requires the impact of a tax position to be recognized in the financial statements if that position is more likely than not of being sustained by the taxing authority. The Company had no unrecognized tax benefits resulting from uncertain tax positions at December 31, 2010 and 2009.

The Company has not, as of yet, conducted a study of its research and development credit carryforwards. Such a study might result in an adjustment to the Company s research and development credit carryforwards, however, until a study is completed and any adjustment is known, no amounts are being presented as an uncertain tax position under ASC 740-10. A full valuation allowance has been provided against the Company s research and development credits and, if an adjustment is required, this adjustment would be offset by an adjustment to the valuation allowance. Thus, there would be no impact to the balance sheet or statement of operations if an adjustment was required.

Table of Contents

IDERA PHARMACEUTICALS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

The Company files income tax returns in the U.S. federal and Massachusetts jurisdictions. The Company is no longer subject to tax examinations for years before 2007, except to the extent that it utilizes NOLs or tax credit carryforwards that originated before 2007. The Company does not believe there will be any material changes in its unrecognized tax positions over the next 12 months. The Company has not incurred any interest or penalties. In the event that the Company is assessed interest or penalties at some point in the future, they will be classified in the financial statements as general and administrative expense.

The Company recorded approximately $150,000 in Alternative Minimum Tax (AMT) as income tax expense during the nine months ended September 30, 2009. The $150,000 was reversed during the three months ended December 31, 2009 as a result of the enactment of the Worker, Homeownership, and Business Assistance Act of 2009 (the Act) in November 2009. The Act contains a number of tax law changes, including a provision that permits companies to carry back certain NOLs up to five years. Under existing tax law prior to the Act, most companies could carry back an NOL a maximum of two years to offset taxable income. The Act generally permits companies to elect to carry back an applicable NOL up to five years. The Act also suspends the 90% limit on the utilization of AMT losses, effectively permitting AMT taxpayers to elect to carry back their entire applicable NOL and then carry that NOL forward without the 90% limitation. In addition to the 2009 AMT reversal, the Company recognized tax benefits for the carryback of NOLs to recover $50,000 in 2006 AMT during the three months ended December 31, 2009.

(12) Employee Benefit Plan

The Company has an employee benefit plan under Section 401(k) of the Internal Revenue Code. The plan allows employees to make contributions up to a specified percentage of their compensation. Under the plan, the Company matches a portion of the employees contributions up to a defined maximum. The Company is currently contributing up to 3% of employee base salary, by matching 50% of the first 6% of annual base salary contributed by each employee. Approximately $139,000, $130,000, and $78,000 of 401(k) benefits were charged to operating expenses during 2010, 2009 and 2008, respectively.

(13) Net (loss) income per Share

The following table sets forth the computation of basic and diluted (loss) income per share for the years ended December 31, 2010 and 2009:

	December 31,	
(In thousands, except per share amounts)	**2010**	**2009**
Numerator for basic and dilutive net (loss) income per share:		
Net (loss) income	$ (17,963)	$ 7,546
Denominator for basic net (loss) income per share:		
Weighted average common shares outstanding	25,139	23,420
Effects of dilutive securities:		
Effect of restricted stock grant		31
Effect of dilutive common stock options and warrants		628

Denominator for diluted (loss) income per share	25,139	24,079
Basic net (loss) income per share	$ (0.71)	$ 0.32
Diluted net (loss) income per share	$ (0.71)	$ 0.31

For the year ended December 31, 2010, basic and diluted net loss per share of common stock is computed using the weighted average number of shares of common stock outstanding during the period. Diluted net loss per share of common stock is the same as basic net loss per share of common stock for 2010, as the effects of the Company s

Table of Contents

IDERA PHARMACEUTICALS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

potential common stock equivalents are antidilutive. Total antidilutive securities were 9,491,000 at December 31, 2010 and consist of stock options and warrants. For the years ended December 31, 2009 and 2008, 2,211,000 and 1,117,000 shares, respectively, were not included in the computation of diluted net income per share as the effects of certain stock options and warrants are antidilutive.

Net (loss) income applicable to common stockholders is the same as net (loss) income for all periods presented.

(14) Supplemental Disclosure of Cash Flow Information

Supplemental disclosure of cash flow information for the periods presented is as follows:

	Year Ended December 31,		
	2010	2009	2008
	(In thousands)		
Supplemental disclosure of cash flow information:			
Cash paid for interest	$ 2	$ 3	$ 92
Cash paid for income taxes	$	$ 220	$ 50
Supplemental disclosure of non cash financing and investing activities:			
Issuance of stock options and common stock for services	$ 8	$ 17	$ 22

(15) Shareholder Rights Plan

The Company adopted a shareholder rights plan in December 2001. Under the rights plan, one right was distributed as of the close of business on January 7, 2002 on each then outstanding share of the Company s common stock. As a result of the June 2006 reverse stock split, the number of rights associated with each share of common stock was automatically proportionately adjusted so that (i) eight rights were then associated with each outstanding share of common stock and (ii) so long as the rights are attached to the common stock, eight rights (subject to further adjustment pursuant to the provisions of the rights plan) shall be deemed to be delivered for each share of common stock issued or transferred by the Company in the future. The rights will automatically trade with the underlying common stock and ordinarily will not be exercisable. The rights will only become exercisable, subject to certain exclusions, if a person acquires beneficial ownership of, or commences a tender offer for, fifteen percent or more of the Company s common stock, unless, in either case, the transaction was approved by the Company s board of directors.

If the rights become exercisable, the type and amount of securities receivable upon exercise of the rights would depend on the circumstances at the time of exercise. Initially, each right would entitle the holder to purchase one one-thousandth of a share of the Company s Series C junior participating preferred stock for an exercise price of $13.00. If a person (other than an exempt person) acquires fifteen percent or more of the Company s common stock in a transaction that was not approved by the Company s board of directors, then each right, other than those owned by the acquiring person, would instead entitle the holder to purchase $26.00 worth of the Company s common stock for

the $13.00 exercise price. If the Company is involved in a merger or other transaction with another company in which the Company is not the surviving corporation, or transfers more than 50% of its assets to another company, in a transaction that was not approved by the Company s board of directors, then each right, other than those owned by the acquiring person, would instead entitle the holder to purchase $26.00 worth of the acquiring company s common stock for the $13.00 exercise price.

The Company s board of directors may redeem the rights for $0.001 per right at any time until ten business days after a person acquires fifteen percent or more of the Company s outstanding common stock. Unless the rights are redeemed or exchanged earlier, they will expire on December 10, 2011.

Table of Contents

IDERA PHARMACEUTICALS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

(16) Warrant Redemptions

In January 2008, the Company sent notice to holders of the Company s warrants to purchase common stock that were issued in August 2004 with an expiration date of August 27, 2009 (the August 2004 Warrants) that under the terms of the warrant agreement, it intended to redeem on March 31, 2008 any August 2004 Warrants not exercised as of that date for a redemption price of $0.08 per share of common stock underlying the August 2004 Warrants. The Company was entitled to exercise this redemption right because the closing price of the Company s common stock for twenty consecutive trading days ending December 20, 2007 was greater than $10.72 or 200% of the exercise price of the warrant. The August 2004 Warrants were exercisable by cash payment only and had an exercise price of $5.36 per share of common stock. Following such notice and through March 31, 2008, the Company received approximately $1,472,000 in proceeds from the exercise of August 2004 Warrants to purchase 274,650 shares of common stock. As of March 31, 2008, all August 2004 Warrants had been exercised.

In June 2008, the Company sent notice to Pillar Investment Limited, the holder of a warrant to purchase 70,684 shares of the Company s common stock that was issued in May 2005 with an expiration date of May 24, 2010 (the May 2005 Warrant) that under the terms of the warrant agreement it intended to redeem on September 12, 2008 the May 2005 Warrant if not exercised as of that date for a redemption price of $0.08 per share of common stock underlying the May 2005 Warrant. The Company was entitled to exercise this redemption right because the closing price of the Company s common stock for twenty consecutive trading days ending June 3, 2008 was greater than $14.24 or 200% of the exercise price of the warrant. The May 2005 Warrant was exercisable by cash payment only and had an exercise price of $7.12 per share of common stock. Following such notice, the Company received approximately $503,000 in proceeds from the exercise of the May 2005 warrant to purchase 70,684 shares of common stock. The May 2005 warrant was exercised in September 2008. Pillar Investment Limited is controlled by a director of the Company.

(17) 2010 Financing

On August 5, 2010, the Company raised $15.1 million in gross proceeds from a registered direct offering of common stock to institutional investors. In the offering, the Company sold 4,071,005 shares of common stock and warrants to purchase 1,628,402 shares of common stock. The common stock and the warrants were sold in units at a price of $3.71 per unit, with each unit consisting of one share of common stock and warrants to purchase 0.40 shares of common stock. The warrants to purchase common stock have an exercise price of $3.71 per share, are exercisable immediately, and will expire if not exercised on or prior to August 5, 2015. The net proceeds to the Company from the offering, excluding the proceeds of any future exercise of the warrants, were approximately $14.1 million.

Table of Contents

Exhibit Index

Exhibit Number	Description	Filed Herewith	Incorporated by Reference to Form	Filing Date	SEC File No.
3.1	Restated Certificate of Incorporation of Idera Pharmaceuticals, Inc., as amended.		10-Q	August 1, 2008	001-31918
3.2	Amended and Restated Bylaws of Idera Pharmaceuticals, Inc.		S-1	November 6, 1995	33-99024
3.3	Certificate of Ownership and Merger.		8-K	September 15, 2005	001-31918
4.1	Specimen Certificate for shares of Common Stock, $.001 par value, of Idera Pharmaceuticals, Inc.		S-1	December 8, 1995	33-99024
4.2	Rights Agreement dated December 10, 2001 by and between Idera Pharmaceuticals, Inc. and Mellon Investor Services LLC, as rights agent.		S-2	October 10, 2003	333-109630
4.3	Amendment No. 1 to Rights Agreement dated as of August 27, 2003 between Idera Pharmaceuticals, Inc. and Mellon Investor Services LLC, as rights agent.		8-K	August 29, 2003	000-27352
4.4	Amendment No. 2 to Rights Agreement dated as of March 24, 2006 between Idera Pharmaceuticals, Inc. and Mellon Investor Services LLC, as rights agent.		8-K	March 29, 2006	001-31918
4.5	Amendment No. 3 to Rights Agreement dated January 16, 2007 between Idera Pharmaceuticals, Inc. and Mellon Investor Services, LLC, as rights agent.		8-K	January 17, 2007	001-31918
10.1	2008 Stock Incentive Plan.		8-K	June 10, 2008	001-31918
10.2	2005 Stock Incentive Plan, as amended		10-Q	August 14, 2006	001-31918
10.3	Amended and Restated 1997 Stock Incentive Plan.		10-Q	May 15, 2001	000-27352
10.4	1995 Director Stock Option Plan.		8-K	June 10, 2008	001-31918
10.5	1995 Employee Stock Purchase Plan, as amended.		8-K	June 10, 2008	001-31918
10.6	Non-Employee Director Nonstatutory Stock Option Agreement Granted under 1997 Stock Incentive Plan.		10-K	March 25, 2005	001-31918
10.7	Form of Incentive Stock Option Agreement Granted Under the 2005 Stock Incentive Plan.		8-K	June 21, 2005	001-31918
10.8	Form of Nonstatutory Stock Option Agreement Granted Under the 2005 Stock Incentive Plan.		8-K	June 21, 2005	001-31918
10.9			10-Q	August 1, 2007	001-31918

	Form of Restricted Stock Agreement Under the 2005 Stock Incentive Plan.			
10.10	Form of Incentive Stock Option Agreement Granted Under the 2008 Stock Incentive Plan.	8-K	June 10, 2008	001-31918
10.11	Form of Nonstatutory Stock Option Agreement Granted Under the 2008 Stock Incentive Plan.	8-K	June 10, 2008	001-31918

Table of Contents

Exhibit Number	Description	Filed Herewith	Incorporated by Reference to Form	Filing Date	SEC File No.
10.12	Form of Nonstatutory Stock Option Agreement (Non-Employee Directors) Granted Under the 2008 Stock Incentive Plan.		8-K	June 10, 2008	001-31918
10.13	Form of Restricted Stock Agreement Under the 2008 Stock Incentive Plan.		8-K	June 10, 2008	001-31918
10.14	Policy on Treatment of Stock Options in the Event of Retirement, approved December 14, 2010.	X			
10.15	Employment Agreement dated October 19, 2005 between Idera Pharmaceuticals, Inc. and Dr. Sudhir Agrawal		10-Q	November 9, 2005	001-31918
10.16	Amendment dated December 17, 2008 to Employment Agreement by and between Idera Pharmaceuticals, Inc. and Dr. Sudhir Agrawal dated October 19, 2005.		8-K	December 18, 2008	001-31918
10.17	Employment Offer Letter dated November 8, 2007 by and between Idera Pharmaceuticals, Inc. and Louis J. Arcudi, III.		10-K/A	December 24, 2008	001-31918
10.18	Amendment dated December 17, 2008 to Employment Offer Letter by and between Idera Pharmaceuticals, Inc. and Louis J. Arcudi, III, Dated November 8, 2007.		8-K	December 18, 2008	001-31918
10.19	Executive Stock Option Agreement for 1,260,000 Shares effective as of July 25, 2001 between Idera Pharmaceuticals, Inc. and Dr. Sudhir Agrawal.		10-Q	October 24, 2002	000-27352
10.20	Executive Stock Option Agreement for 550,000 Shares effective as of July 25, 2001 between Idera Pharmaceuticals, Inc. and Dr. Sudhir Agrawal.		10-Q	October 24, 2002	000-27352
10.21	Executive Stock Option Agreement for 500,000 Options effective as of July 25, 2001 between Idera Pharmaceuticals, Inc. and Dr. Sudhir Agrawal.		10-Q	October 24, 2002	000-27352
10.22	License Agreement dated February 21, 1990 and restated as of September 8, 1993 between Idera Pharmaceuticals, Inc. and University of Massachusetts Medical Center.		S-1	November 6, 1995	33-99024
10.23	Amendment No. 1 to License Agreement, dated as of February 21, 1990 and restated as of September 8, 1993, by and between		10-Q	August 14, 1997	000-27352

	University of Massachusetts Medical Center and Idera Pharmaceuticals, Inc., dated as of November 26, 1996.			
10.24	Collaboration and License Agreement by and between Isis Pharmaceuticals, Inc., and Idera Pharmaceuticals, Inc., dated May 24, 2001.	10-Q	August 20, 2001	000-27352

Table of Contents

Exhibit Number	Description	Filed Herewith	Incorporated by Reference to Form	Filing Date	SEC File No.
10.25	Amendment No. 1 to the Collaboration and License Agreement, dated as of May 24, 2001 by and between Isis Pharmaceuticals, Inc. and Idera Pharmaceuticals, Inc., dated as of August 14, 2002.		10-K	March 31, 2003	000-27352
10.26	Master Agreement relating to the Cross License of Certain Intellectual Property and Collaboration by and between Isis Pharmaceuticals, Inc. and Idera Pharmaceuticals, Inc., dated May 24, 2001.		10-Q	August 20, 2001	000-27352
10.27	Exclusive License and Research Collaboration Agreement by and between Merck, Inc. and Idera Pharmaceuticals, Inc., dated December 8, 2006.		8-K	March 6, 2007	001-31918
10.28	License Agreement by and between Merck KGaA and Idera Pharmaceuticals, Inc., dated December 18, 2007.		10-K	March 11, 2008	001-31918
10.29	Amendment dated February 12, 2009 to the License Agreement by and between Merck KGaA and Idera Pharmaceuticals, Inc., dated December 18, 2007.		10-K	March 11, 2009	001-31918
10.30	Unit Purchase Agreement by and among Idera Pharmaceuticals, Inc. and certain persons and entities listed therein, dated April 1, 1998.		10-K	April 1, 2002	000-27352
10.31	Registration Rights Agreement dated as of May 20, 2005 by and among Idera Pharmaceuticals, Inc., Purchasers and Pillar Investment Limited.		10-Q	August 9, 2005	001-31918
10.32	Registration Rights Agreement, dated March 24, 2006, by and among Idera Pharmaceuticals, Inc. and the Investors named therein.		8-K	March 29, 2006	001-31918
10.33	Form of Warrant issued to Investors in Idera Pharmaceuticals, Inc. s March 24, 2006 Private Financing.		8-K	March 29, 2006	001-31918
10.34	Registration Rights Agreement, dated March 24, 2006, by and among Idera Pharmaceuticals, Inc., Biotech Shares Ltd. and Youssef El Zein.		8-K	March 29, 2006	001-31918
10.35	Amendment No. 1 to the Registration Rights Agreement dated March 24, 2006, by and among Idera Pharmaceuticals, Inc. and Biotech Shares Ltd.		10-Q	August 14, 2006	001-31918

10.36	Warrant issued to Biotech Shares Ltd. on March 24, 2006.	8-K	March 29, 2006	001-31918
10.37	Form of Warrant issued to Investors in Idera Pharmaceuticals, Inc. s August 5, 2010 Financing.	10-Q	November 4, 2010	001-31918
10.38	Consulting Agreement dated as of August 1, 2010 by and between Idera Pharmaceuticals, Inc. and Alice Bexon.	10-Q	August 4, 2010	001-31918

Table of Contents

Exhibit Number	Description	Filed Herewith	Incorporated by Reference to Form	Filing Date	SEC File No.
10.39	Consulting Agreement dated as of April 1, 2010 between Idera Pharmaceuticals, Inc. and Malcolm MacCoss, Ph.D.		10-Q	May 4, 2010	001-31918
10.40	Amendment No. 2 dated December 15, 2009 amending Consulting Agreement dated as of January 1, 2008 between Idera Pharmaceuticals, Inc. and Karr Pharma Consulting, LLC.		10-Q	May 4, 2010	001-31918
10.41	Director Compensation Program, Effective July 1, 2010	X			
23.1	Consent of Independent Registered Public Accounting Firm.	X			
31.1	Certification of Chief Executive Officer pursuant to Exchange Act Rules 13a-14 and 15d-14, as adopted pursuant to Section 302 of Sarbanes-Oxley Act of 2002.	X			
31.2	Certification of Chief Financial Officer X pursuant to Exchange Act Rules 13a-14 and 15d-14, as adopted pursuant to Section 302 of Sarbanes-Oxley Act of 2002.	X			
32.1	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.	X			
32.2	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.	X			

Confidential treatment granted as to certain portions, which portions are omitted and filed separately with the Commission.

Management contract or compensatory plan or arrangement required to be filed as an Exhibit to the Annual Report on Form 10-K.