ZIOPHARM ONCOLOGY INC
Form 10-K
March 03, 2014
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UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, DC 20549

FORM 10-K

x **ANNUAL REPORT UNDER SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended December 31, 2013

OR

¨ **TRANSITION REPORT UNDER SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the transition period from _____ to _____

Commission File Number 001-33038

ZIOPHARM Oncology, Inc.

(Exact Name of Registrant as Specified in Its Charter)

Delaware	**84-1475642**
(State or Other Jurisdiction of	**(IRS Employer**
Incorporation or Organization)	**Identification No.)**

One First Avenue, Parris Building 34, Navy Yard Plaza

Boston, Massachusetts	**02129**
(Address of Principal Executive Offices)	**(Zip Code)**

(617) 259-1970

(Issuer s Telephone Number, Including Area Code)

(Former Name, Former Address and Former Fiscal Year, if Changed Since Last Report)

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

Common Stock (par value $0.001 per share)

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

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

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 past 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes x No ¨

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes x No ¨

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

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

Large Accelerated Filer ¨	Accelerated Filer x
Non-Accelerated Filer ¨	Smaller Reporting Company ¨

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

The aggregate market value of the registrant s common stock held by non-affiliates was $141,663,241 as of June 30, 2013 (the last business day of the registrant s most recently completed second fiscal quarter), based on a total of 67,138,977 shares of common stock held by non-affiliates and on a closing price of $2.11 as reported on the NASDAQ Capital Market on June 30, 2013.

As of February 10, 2014, there were 100,556,625 shares of the registrant s common stock, $.001 par value per share, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE:

Portions of the definitive proxy statement for our 2014 annual meeting of stockholders, which is to be filed within 120 days after the end of the fiscal year ended December 31, 2013, are incorporated by reference into Part III of this Form 10-K, to the extent described in Part III.

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ZIOPHARM Oncology, Inc. ***(a development stage enterprise)***

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FOR THE FISCAL YEAR ENDED DECEMBER 31, 2013

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All trademarks, trade names and service marks appearing in this annual report on Form 10-K are the property of their respective owners

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Special note regarding 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, or the Securities Act, and Section 21E of the Exchange Act. These statements relate to future events or to our future operating or financial performance and involve known and unknown risks, uncertainties and other factors which may cause our actual results, performance or achievements to be materially different from any future results, performances or achievements expressed or implied by the forward-looking statements. Forward-looking statements may include, but are not limited to statements about:

- The progress, timing and results of preclinical and clinical trials involving our drug candidates;
- The progress of our research and development programs;
- Our plans or others plans to conduct future clinical trials or research and development efforts;
- The risk that final trial data may not support interim analysis of the viability of our drug candidates;
- Our plans and expectations regarding partnering our drug candidates;
- The benefits to be derived from relationships with our collaborators;
- The receipt or anticipated receipt of regulatory clearances and approvals;
- Estimates of the potential markets for our drug candidates;
- Our ability to adequately protect our intellectual property rights;
- The use of proceeds from this offering;
- Our estimates of future revenues and profitability;
- Our estimates regarding our capital requirements and our ability to control costs; and

Our need for additional funding and the period through which we anticipate our resources will sufficient to fund operations.

In some cases, you can identify forward-looking statements by terms such as may, will, should, could, would, plans, anticipates, believes, estimates, projects, predicts, potential and similar expressions intended to iden forward-looking statements. These statements reflect our current views with respect to future events and are based on assumptions and subject to risks and uncertainties. Given these uncertainties, you should not place undue reliance on these forward-looking statements. We discuss many of these risks in greater detail under the heading Risk factors in Part I, Item 1A of this Annual Report on Form 10-K.

You should read Annual Report on Form 10-K with the understanding that our actual future results may be materially different from what we expect. We qualify all of the forward-looking statements in the foregoing documents by these cautionary statements.

Unless required by law, we undertake no obligation to update or revise any forward-looking statements to reflect new information or future events or developments. Thus, you should not assume that our silence over time means that actual events are bearing out as expressed or implied in such forward-looking statements.

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PART I

Item 1. Business

General

ZIOPHARM Oncology, Inc. is a biopharmaceutical company that seeks to acquire, develop and commercialize, on its own or with commercial partners, a diverse portfolio of cancer therapies that can address unmet medical needs through synthetic biology. Pursuant to an exclusive channel agreement with Intrexon Corporation, or Intrexon, we obtained rights to Intrexon s synthetic biology platform for use in the field of oncology, which included two existing clinical stage product candidates, Ad-RTS-IL-12 + veledimex and DC-RTS-IL-12 + veledimex. The synthetic biology platform employs an inducible gene-delivery system that enables controlled delivery of genes that produce therapeutic proteins to treat cancer. Ad-RTS-IL-12 + veledimex is our lead drug candidate, which uses this gene delivery system to produce Interleukin-12, or IL-12, a potent, naturally occurring anti-cancer protein. We are currently studying Ad-RTS-IL-12 + veledimex in two Phase 2 studies, the first for the treatment of metastatic melanoma, and the second for the treatment of metastatic breast cancer, and expect to announce early preliminary data from these Phase 2 studies in the fourth quarter of 2014. We plan to continue to combine Intrexon s synthetic biology platform with our capabilities to translate science to the patient setting to develop additional products to stimulate key pathways, including those used by the body s immune system to inhibit the growth and metastasis of cancers. We have numerous programs under development and expect to file multiple investigational new drug, or IND, applications through 2015. We also have a portfolio of small molecule drug candidates, which are no longer a strategic focus of our development activities for which we are seeking partners to pursue further development and potential commercialization.

Enabling Technology

Synthetic biology entails the application of engineering principles to biological systems for the purpose of designing and constructing new biological systems or redesigning/modifying existing biological systems. Biological systems are governed by DNA, the building blocks of gene programs, which control cellular processes by coding for the production of proteins and other molecules that have a functional purpose and by regulating the activities of these molecules. This regulation occurs via complex biochemical and cellular reactions working through intricate cell signaling pathways, and control over these molecules modifies the output of biological systems. Synthetic biology has been enabled by the application of information technology and advanced statistical analysis, also known as bioinformatics, to genetic engineering, as well as by improvements in DNA synthesis. Synthetic biology aims to engineer gene-based programs or codes to modify cellular function to achieve a desired biological outcome. Its application is intended to allow more precise control of drug concentration and dose, thereby improving the therapeutic index associated with the resulting drug.

On January 6, 2011, we entered into an Exclusive Channel Partner Agreement with Intrexon, which we refer to as the Channel Agreement, to develop and commercialize novel DNA-based therapeutics in the field of cancer treatment by combining Intrexon s synthetic biology platform with our capabilities to translate science to the patient setting. As a result, our DNA synthetic biology platform employs an inducible gene-delivery system that enables controlled delivery of genes that produce therapeutic proteins to treat cancer. The first example of this regulated controlled delivery is achieved by producing IL-12, a potent, naturally occurring anti-cancer protein, under the control of Intrexon s proprietary biological switch to turn on/off the therapeutic protein expression at the tumor site. We and Intrexon refer to this switch as the RheoSwitch Therapeutic System® or RTS® platform. Our initial drug candidates being developed using the synthetic biology platform are Ad-RTS-IL-12 + veledimex and DC-RTS-IL-12 + veledimex with a current focus on Ad-RTS-IL-12 + veledimex.

We have demonstrated that we are able to simultaneously express multiple effectors under control of the RTS® platform from the same construct. In mice, we have also shown that we are able to express multigenic DNA constructs in an embedded, controlled bioreactor, by injecting into skeletal muscle and measuring the DNA-coded proteins in the blood. Furthermore, we have also demonstrated the ability to express these same three genes under RTS® platform control in mesenchymal stem cells, or MSCs.

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More detailed descriptions of Ad-RTS-IL-12 + veledimex, DC-RTS-IL-12 + veledimex, palifosfamide, darinaparsin and indibulin and our clinical development plans for each, are set forth in this report under the caption Business Product Candidates.

Cancer Overview

Cancer is a group of diseases characterized by either the runaway growth of cells or the failure of cells to die normally. Often, cancer cells spread to distant parts of the body, where they can form new tumors. Cancer can arise in any organ of the body and, according to the American Cancer Society, strikes slightly less than one of every two American men and a little more than one of every three American women at some point in their lives.

It is reported that there are more than 100 different varieties of cancer. Carcinomas, the most common type of cancer, originate in tissues that cover a surface or line a cavity of the body. Lymphomas are cancers of the lymph system, which is a circulatory system that bathes and cleanses the body s cells. Leukemias involve blood-forming tissues and blood cells. As their name indicates, brain tumors are cancers that begin in the brain, skin cancers, including melanomas, originate in the skin, while soft tissue sarcoma, or STS, arises in soft tissue. Cancers are considered metastatic if they spread through the blood or lymphatic system to other parts of the body to form secondary tumors.

Cancer is caused by a series of mutations (alterations) in genes that control cells ability to grow and divide. Some mutations are inherited; others arise from environmental factors such as smoking or exposure to chemicals, radiation, or viruses that damage cells DNA. The mutations cause cells to divide relentlessly or lose their normal ability to die.

According to the American Cancer Society, it was estimated that about 1,665,540 new cases of cancer are expected to be diagnosed in 2014 and about 585,720 Americans are expected to die from cancer in 2014. The cost of treating cancer is significant. The National Institutes of Health estimates that the overall costs of cancer in 2009 were $216.6 billion. These costs included an estimate of $86.6 billion in direct medical costs and $130.0 billion for indirect mortality costs.

Cancer Treatments

Major treatments for cancer include surgery, radiotherapy, and chemotherapy; the latter including newer approaches such as anti-angiogenic, vascular disruption and targeted therapies. Also associated with the treatment of cancer is supportive care; and recently, immunological-based approaches have shown to be of benefit either alone or in combination. While there are also hundreds of experimental treatments under investigation, including DNA and other immunological based therapies, we believe cancer treatment will remain a significant unmet medical need for the foreseeable future.

Radiotherapy: Also called radiation therapy, radiotherapy is the treatment of cancer and other diseases with ionizing radiation. Ionizing radiation deposits energy that injures or destroys cells in the area being treated (the target tissue) by damaging their genetic material, making it impossible for these cells to continue growing. Although radiation damages both cancer cells and normal cells, the latter are able to repair and regain proper function. Radiotherapy may be used to treat localized solid tumors such as cancers of the skin, tongue, larynx, brain, breast, or uterine cervix. It can also be used to treat leukemia and lymphoma. Scientists are also looking for ways to increase the effectiveness of radiation therapy. Two types of investigational drugs are being studied for their effect on cells exposed to radiation. Radiosensitizers increase the damage done to tumor cells by radiation; radioprotectors protect normal tissues from the effects of radiation.

Chemotherapy: Chemotherapy is the treatment of cancer with cytotoxics, which are anti-cancer drugs that destroy cancer cells by stopping them from multiplying. Healthy cells, especially those that divide quickly, can also be harmed with the use of cytotoxics. Harm to healthy cells is what causes side effects. These cells usually

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repair themselves after chemotherapy and in many cases, newer agents may offer a greater therapeutic window the difference between a dose that is helpful and one that is toxic, often referred to as targeted therapies. Cytotoxic agents act primarily by disrupting cellular pathways involved in maintaining cellular integrity including blood supply, repair, or activity that affects the production or function of DNA, RNA, or protein. Although there are many cytotoxic agents, there is a considerable overlap in their mechanisms of action. As such, the choice of a particular agent or group of agents is generally not a consequence of a prior prediction of anti-tumor activity by the drug, but instead the result of empirical clinical trials.

Immunological and DNA-based approaches: The approval of Bristol-Meyers Squibb s YERVOY (ipilimumab) for melanoma validated an immune-based approach and has opened the full exploration of harnessing the immune system to treat cancer. Strategies that are synthetic biology or otherwise DNA-based, including the approach used by Intrexon, are in clinical development, providing a further promising new avenue to treat cancer.

Supportive Care: Cancer treatments are directed at killing or eradicating the cancer that exists in a patient s body. Unfortunately, the delivery of many cancer therapies adversely affects the body s normal organs. The undesired consequence of harming an organ not involved with cancer is referred to as a complication of treatment or a side effect.

In addition to anemia, fatigue, hair-loss, reduction in blood platelets and white and red blood cells, and bone pain, two of the most common side effects of chemotherapy are nausea and vomiting. Several drugs have been developed to help prevent and control chemotherapy-induced nausea and vomiting, including 5HT3 receptor antagonists such as ondansetron, which is a selective blocking agent of the hormone serotonin.

Product Candidates

The following chart identifies our current synthetic biology product candidates and their stage of development, each of which are described in more detail below.

Synthetic Biology Programs:

Ad-RTS-IL-12 + veledimex. Ad-RTS-IL-12 + veledimex is currently being tested in two Phase 2 studies, the first for the treatment of metastatic melanoma, and the second for the treatment of unresectable recurrent or metastatic breast cancer. Ad-RTS-IL-12 + veledimex is our lead drug candidate, which uses our gene delivery system to produce Interleukin-12, or IL-12, a potent, naturally occurring anti-cancer protein. Interleukin-12 (IL-12) is a potent immunostimulatory cytokine which activates and recruits dendritic cells that facilitate the cross-priming of

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tumor antigen-specific T cells. Intratumoral administration of Ad-RTS-IL-12 + veledimex, which allows for adjustment of IL-12 gene expression upon varying the dose of veledimex, is designed to reduce the toxicity elicited by systemic delivery of IL-12, and increase efficacy through high intratumoral expression.

In March 2013, we announced the initiation of a randomized, open label Phase 2 clinical study of Ad-RTS-IL-12 + veledimex to treat metastatic breast cancer. The two-part, multi-center U.S. study is enrolling patients with unresectable, recurrent or metastatic breast cancer who have visible lesions or lesions accessible by injection. The study is designed to assess the safety and efficacy of the therapeutic Ad-RTS-IL-12 + veledimex. Part one of this two-part study will consist of a safety assessment for Ad-RTS-IL-12 + veledimex while part two will consist of an efficacy evaluation of the Ad-RTS-IL-12 + veledimex. The primary endpoint of the study is rate of progression-free survival at 16 weeks. Secondary endpoints include objective response rate, duration of response and evaluation of pharmacodynamic tumor markers. Initiation of the clinical study was followed by the presentation of results, from a study in a breast cancer murine preclinical model, demonstrating the anti-tumor effects and tolerability of Ad-RTS-IL-12 + veledimex. The data were presented at the American Association for Cancer Research 2013 Annual Meeting in April.

In May 2013, we announced promising results from nonclinical and Phase 1 studies in metastatic melanoma using Ad-RTS-IL-12 + veledimex. In these studies, the controlled expression of IL-12, through a regulatable gene therapy strategy, was found to limit systemic toxicity while inducing biological and clinical activity. The findings were presented in an oral session at the 16th Annual Meeting of the American Society of Gene and Cell Therapy (ASGCT). In June, updated results were presented at the 2013 American Society for Clinical Oncology (ASCO). Ad-RTS-IL-12 + veledimex induce production of IL-12 mRNA in the tumor microenvironment (switch on). Upon removal of veledimex, IL-12 mRNA levels return to baseline (switch off). Following treatment with Ad-RTS-IL-12 + veledimex, increases in TILs (CD8+, CD45RO+) were observed in the tumor microenvironment. Clinical activity was observed in injected and non-injected lesions primarily at the higher doses of veledimex. Inflammation, shrinkage, flattening, and depigmentation of lesions correlated with the elevated serum levels of IFN-g. Ad-RTS-hL-12 + veledimex therapy was generally well-tolerated and its safety profile is consistent with other immunotherapies.

We reported the controlled local expression of IL-12 as an immunotherapeutic treatment of glioma through the use of the RheoSwitch Therapeutic System® (RTS®) at the October 2013 AACR-NCI-EORTC. Veledimex brain penetration was demonstrated in normal mice and monkeys with intact blood brain barrier. Treatment with Ad-RTS-IL-12 + veledimex and DC-RTS-IL-12 + veledimex both demonstrated dose-related increase in survival in the mouse GL-261 glioma model with no adverse clinical signs observed. In December 2013, we announced unanimous Recombinant DNA Advisory Committee (RAC) approval for the initiation of a Phase 1 study of Ad-RTS-IL-12 + veledimex, an adenoviral vector engineered to express interleukin-12 under the control of veledimex, an oral activator, in subjects with recurrent or progressive high grade gliomas (brain cancer). Upon agreement with the FDA of this Phase 1 study we anticipate its initiation in the first half of 2014. Glioblastoma is by far the most frequent malignant glioma and is associated with a particularly aggressive course and dismal prognosis. The current standard of care is based in surgical resection to the maximum feasible extent, followed by radiotherapy and concomitant adjuvant temozolomide. Such aggressive treatment, however, is associated with only modest improvements in survival. Newly diagnosed glioblastoma patients have a median overall survival, or OS, of 11-17 month.

Also in December 2013, we presented positive interim results from the ongoing Phase 1/2 study of Ad-RTS-IL-12 + veledimex in patients with advanced melanoma. The results from this multicenter study were presented at Melanoma Bridge 2013 Conference at the session Best Abstracts on News in Immunotherapy , an international conference co-sponsored by Istituto Nazionale Tumori Fondazione, Sidra Medical and Research Center, and the Society for ImmunoTherapy of Cancer that is being held in Naples, Italy. In this study, 21 patients with unresectable, recurrent stage III/IV melanoma have been treated with intratumoral injections of Ad-RTS-IL-12 + veledimex and the oral

activator veledimex. The purpose of the study is to evaluate the safety and tolerability of the Ad-RTS-IL-12 + veledimex and veledimex therapy, determine tumor and immune response,

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and select the optimal dose and schedule of veledimex for future study. To date, expression of IL-12 mRNA in study subjects tumors was determined to be controlled by veledimex. In addition, upon stopping veledimex dosing, expression of the IL-12 mRNA returned to baseline levels, demonstrating the on and off control of Intrexon Corporation s RheoSwitch Therapeutic System® platform. In this dose range, results to date demonstrate that Ad-RTS-IL-12 + veledimex has potent biologic activity, as measured by on-mechanism and on-target toxicity and response in injected and non-injected lesions. Following treatment, 11 of 16 evaluable patients have demonstrated a response of stable disease or better on a per lesion basis. The most common severe adverse events (SAEs) were pyrexia, hypotension, mental status changes, and cytokine release syndrome. Four of seven patients with SAEs had veledimex dosing stopped during cycle 1. Three had SAEs during subsequent cycles, and stopped veledimex dosing at that time. Importantly, all SAEs were reversed after veledimex dosing was stopped, demonstrating the on and off control of veledimex on gene expression.

Also in December 2013, we announced preliminary results from the ongoing Phase 2 clinical study of Ad-RTS-IL-12 + veledimex in patients with unresectable recurrent or metastatic breast cancer. The findings were reported in a poster presentation at the San Antonio Breast Cancer (SABC) Symposium in San Antonio, Texas. This multicenter Phase 2 study is designed to evaluate the safety and efficacy of Ad-RTS-IL-12 + veledimex in subjects with recurrent/metastatic breast cancer with accessible tumor(s). The primary endpoint of the study is rate of progression-free survival at 16 weeks. Secondary objectives include objective response rate, duration of response and evaluation of pharmacodynamic tumor markers. Six patients were evaluable for safety at the time of presentation. The most common severe adverse events (SAEs) were neutropenia, AST elevation and pyrexia. Importantly, in the absence of disease progression, all SAEs were reversed after veledimex dosing was stopped, demonstrating the on and off control of veledimex on gene expression. Preliminary monotherapy PFS rate was reported for two patients to date, with one subject progressing at 12 weeks and a second at 16 weeks. Recruitment for the Phase 2 clinical trial is ongoing to refine the dose, schedule and optimal combination regimen.

The Company is advancing the Ad-RTS-IL-12 + veledimex platform in melanoma, breast cancer and glioblastoma.

We are in the process of finalizing clinical protocol designs that will lead to the initiation of Phase 2 studies in the combination with standard of care, or SOC, in the first half of 2014 for the treatment of metastatic melanoma and metastatic breast cancer. Melanoma, breast cancer, and glioma (detailed below) represent significant market potentials with high unmet medical needs. The incidence of melanoma is 76,690, breast cancer is 234,580, and glioblastoma is 18,000 with the majority of patients needing other, currently non available therapies to treat the disease and improve outcomes.

DC-RTS-IL-12 + veledimex. We historically completed enrollment in a Phase 1 dose escalation study of DC-RTS-IL-12 + veledimex in the second quarter of 2012 in the United States. DC-RTS-IL-12 + veledimex employs intratumoral injection of modified dendritic cells from each patient and oral dosing of veledimex to turn on in vivo expression of IL-12. DC-RTS-IL-1 + veledimex 2, through the RTS® platform, controls the timing and level of transgene expression. The RTS® technology functions as a gene switch for the regulated expression of human IL-12 in the patients dendritic cells which are transduced with a replication incompetent adenoviral vector carrying the IL-12 gene under the control of the RTS® platform. Currently, there are no actively enrolling studies using DC-RTS-IL-12 + veledimex, as we have prioritized our clinical development efforts on Ad-RTS-IL-12 + veledimex.

Earlier Stage Programs. At the October 2013 AARC-NCI-EORTC we also presented results showing systemic expression of three distinct immune effectors from a single RTS® regulated multigenic construct in mice, in vitro data demonstrating the potential use of MSCs for tumor-targeted delivery of single or multiple RTS® regulated cancer immunotherapies, and data demonstrating functional single chain variable fragment-Fc fusion proteins as an alternate approach to monoclonal antibodies which are more amenable for multi-genic therapies.

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We are actively pursuing several synthetic biology approaches, including gene delivery with human MSCs and functional single chain variable fragment-Fc fusion proteins and multigenic approaches in our discovery pipeline to address unmet medical needs in cancer that are expected to result in multiple INDs planned through 2015.

Small Molecule Programs

Palifosfamide, ZIO-201. The small molecule palifosfamide, or isophosphoramide mustard, is a proprietary active metabolite of the pro-drug ifosfamide. Because palifosfamide is the stabilized active metabolite of ifosfamide and a distinct pharmaceutical composition without the acrolein or chloroacetaldehyde metabolites we believe that the administration of palifosfamide may be an effective and well-tolerated agent to treat cancer. In addition to anticipated lower toxicity, palifosfamide may have other advantages over ifosfamide and cyclophosphamide. Palifosfamide cross-links DNA differently than the active metabolite of cyclophosphamide, resulting in a different activity profile. We are seeking to out-license palifosfamide.

Soft Tissue Sarcoma. Previously we have studied palifosfamide in combination with doxorubicin in patients with soft tissue sarcoma. In March 2013, we announced that the Phase 3 study, PICASSO 3, did not meet its primary endpoint of progression-free survival, and that we would terminate our development program in metastatic soft tissue sarcoma. PICASSO 3 study data was presented at the 2013 European Cancer Congress.

Small-Cell Lung Cancer. Small-Cell Lung Cancer, or SCLC, is almost exclusively associated with smoking. Standard of care for SCLC, which is etoposide and platinum therapy, has changed little in decades. Published studies of ifosfamide in combination with standard of care have evidenced enhanced efficacy but also with enhanced side effects, providing for an unfavorable benefit to risk association. We believe that combining palifosfamide with standard of care could offer a separation of enhanced efficacy from increased toxicity.

Data from a Phase 1 trial of palifosfamide in combination with etoposide and carboplatin informed appropriate dosing for initiating an adaptive Phase 3 trial in first-line, metastatic SCLC. In June 2012, the Company initiated an international, multi-center, open-label, adaptive, randomized study of palifosfamide in combination with carboplatin and etoposide, or PaCE, chemotherapy versus carboplatin and etoposide, or CE, alone in chemotherapy naïve patients with metastatic small cell lung cancer, which we refer to as MATISSE. The trial s primary endpoint is overall survival.

Based on the outcome of PICASSO 3 in soft tissue sarcoma and the resulting revision in the Company s development plans for palifosfamide, enrollment in this study was suspended with 188 patients enrolled. The interim analysis of overall survival events in MATISSE is forecasted to be reached during the second half of 2014. We are seeking to out-license palifosfamide on a global basis.

Darinaparsin, ZIO-101. Darinaparsin is an anti-mitochondrial (organic arsenic) compound (covered by issued patents and pending patent applications in the United States and in foreign countries). Phase 1 testing of the intravenous, or IV, form of darinaparsin in solid tumors and hematological cancers was completed. We reported clinical activity and a safety profile from these studies as predicted by preclinical results. We subsequently completed Phase 2 studies in advanced myeloma, primary liver cancer and in certain other hematological cancers. At the May 2009 annual meeting of ASCO, we reported favorable results from the IV trial in lymphoma, particularly peripheral T-cell lymphoma, or PTCL. A Phase 1 trial in solid tumors with an oral form of darinaparsin has completed enrollment. We have obtained Orphan Drug Designation for darinaparsin in the United States and Europe for the treatment of PTCL and have entered into a licensing agreement with Solasia Pharma K.K., or Solasia, for the Asia/Pacific territory with a focus on IV-administered darinaparsin in PTCL. Clinical studies are currently ongoing with Solasia. We are seeking to out-license darinaparsin for territories not covered by our agreement with Solasia.

Indibulin, ZIO-301. Indibulin is a novel, small molecule inhibitor of tubulin polymerization and is potentially safer than other tubulin inhibitors as no neurotoxicity has been observed in preclinical studies or in Phase 1

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clinical trials. Indibulin has a different pharmacological profile from other tubulin inhibitors currently on the market as it binds to a unique site on tubulin and is active in multi-drug-resistant (MDR-1, MRP-1) and taxane-resistant tumors. A Phase 1 study was conducted in late stage metastatic breast cancer and was found to be safe and tolerable. We are seeking to out-license indibulin on a global basis.

Development plans

We are currently pursuing several clinical development opportunities, principally in our synthetic biology programs. We are also evaluating additional potential preclinical candidates and continuing discovery efforts aimed at identifying other potential product candidates under our Channel Agreement with Intrexon. In addition, we may seek to enhance our pipeline in synthetic biology through highly focused strategic transactions, which may include acquisitions, partnerships and in-licensing activities. We are actively seeking to out-license some or all of our small molecule programs to further support our synthetic biology efforts.

Our current plans involve using our principal internal financial resources to develop the synthetic biology program, with the intention of ultimately partnering or otherwise raising additional capital to support further development activities for our strategic product candidates. As of December 31, 2013, we had approximately $68.2 million of cash and cash equivalents. Based upon our current plans, we anticipate that our cash resources will be sufficient to fund our operations into the second quarter of 2015. This forecast of cash resources is forward-looking information that involves risks and uncertainties, and the actual amount of our expenses could vary materially and adversely as a result of a number of factors, including the factors discussed in the Risk Factors section of this prospectus supplement and the uncertainties applicable to our forecast for the overall sufficiency of our capital resources. We have based our estimates on assumptions that may prove to be wrong, and our expenses could prove to be significantly higher than we currently anticipate.

Furthermore, the successful development of our product candidates is highly uncertain. Product development costs and timelines can vary significantly for each product candidate, are difficult to accurately predict, and will require us to obtain additional funding, either alone or in connection with partnering arrangements. Various statutes and regulations also govern or influence the development, manufacturing, safety, labeling, storage, record keeping and marketing of each product. The lengthy process of seeking approval and the subsequent compliance with applicable statutes and regulations require the expenditure of substantial resources. Any failure by us to obtain, or any delay in obtaining, regulatory approvals could materially, adversely affect our business. To date, we have not received approval for the sale of any product candidates in any market and, therefore, have not generated any revenues from our product candidates.

Competition

The development and commercialization for new products to treat cancer, including the indications we are pursuing is highly competitive, and considerable competition exists from major pharmaceutical, biotechnology and specialty cancer companies. In addition, many of these companies have more experience in preclinical and clinical development, manufacturing, regulatory, and global commercialization. We are also competing with academic institutions, governmental agencies, and private organizations that are conducting research in the field of cancer. Competition for highly qualified employees and their retention is intense, particularly as companies adjust to the current economic environment.

Other treatments for cancer that may compete with our product candidates are summarized under the caption Cancer Treatments above.

License Agreements, Intellectual Property and Other Agreements.

Our goal is to obtain, maintain, and enforce patent protection for our products, formulations, processes, methods, and other proprietary technologies in order to preserve our trade secrets and to operate without infringing upon the proprietary rights of other parties. Our policy is to actively seek the broadest possible intellectual property protection for our product candidates through a combination of contractual arrangements and patents, both in the United States and abroad.

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Patent and Technology License Agreement The University of Texas M. D. Anderson Cancer Center and the Texas A&M University System.

On August 24, 2004, we entered into a patent and technology license agreement with The Board of Regents of the University of Texas System, acting on behalf of The University of Texas M. D. Anderson Cancer Center and the Texas A&M University System, which we refer to collectively as the Licensors. Under this agreement, we were granted an exclusive, worldwide license to rights (including rights to U.S. and foreign patent and patent applications and related improvements and know-how) for the manufacture and commercialization of two classes of organic arsenicals (water- and lipid-based) for human and animal use. The class of water-based organic arsenicals includes darinaparsin.

As partial consideration for the license rights obtained, we made an upfront payment in 2004 of $125 thousand and granted the Licensors 250,487 shares of our common stock. In addition, we issued options to purchase an additional 50,222 shares outside our 2003 Stock Option Plan for $0.002 per share following the successful completion of certain clinical milestones, which vested with respect to 12,555 shares upon the filing of an IND for darinaparsin in 2005 and vested with respect to another 25,111 shares upon the completion of dosing of the last patient for both Phase 1 clinical trials in 2007. We recorded $120 thousand of stock-based compensation expense related to the vesting in 2007. The remaining 12,556 shares will vest upon enrollment of the first patient in a multi-center pivotal clinical trial i.e. a human clinical trial intended to provide the substantial evidence of efficacy necessary to support the filing of an approvable New Drug Application, or NDA. In addition, the Licensors are entitled to receive certain milestone payments, including $100 thousand that was paid in 2005 upon the commencement of Phase 1 clinical trial and $250 thousand that was paid in 2006 upon the dosing of the first patient in our Phase 2 clinical trial for darinaparsin. We may be required to make additional payments upon achievement of certain other milestones in varying amounts which on a cumulative basis could total up to an additional $4.5 million. In addition, the Licensors are entitled to receive single digit percentage royalty payments on sales from a licensed product and will also be entitled to receive a portion of any fees that we may receive from a possible sublicense under certain circumstances.

The license agreement also contains other provisions customary and common in similar agreements within the industry, such as the right to sublicense our rights under the agreement. However, if we sublicense our rights prior to the commencement of a pivotal study, i.e. a human clinical trial intended to provide the substantial evidence of efficacy necessary to support the filing of an approvable NDA, the Licensors will be entitled to receive a share of the payments received by us in exchange for the sublicense (subject to certain exceptions). The term of the license agreement extends until the expiration of all claims under patents and patent applications associated with the licensed technology, subject to earlier termination in the event of defaults by us or the Licensors under the license agreement, or if we become bankrupt or insolvent. No milestones under the license agreement were reached or expensed during the years ended December 31, 2013, 2012, 2011 or 2010.

License Agreement with DEKK-Tec, Inc.

On October 15, 2004, we entered into a license agreement with DEKK-Tec, Inc., pursuant to which we were granted an exclusive, worldwide license for palifosfamide. As part of the signing of license agreement with DEKK-Tec, we expensed an upfront $50 thousand payment to DEKK-Tec in 2004.

In consideration for the license rights, DEKK-Tec is entitled to receive payments upon achieving certain milestones in varying amounts which on a cumulative basis may total $4.0 million. Of the aggregate milestone payments, most will be creditable against future royalty payments as referenced. We expensed a $100 thousand milestone payment upon achieving Phase 2 milestones during the year ended December 31, 2006. On March 16, 2010, we expensed a $100 thousand milestone payment upon receiving a United States Patent for palifosfamide. In October 2010, we expensed a

$300 thousand milestone payment upon achieving Phase 3 milestones. No milestones under the license agreement have been reached or expensed since 2010. Additionally, in 2004 we issued DEKK-Tec an option to purchase 27,616 shares of our common stock for $0.02 per share. Upon the execution of the license agreement, 6,904 shares vested and were subsequently exercised in 2005. In October

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2010, an additional 6,904 shares vested upon the achievement of Phase 3 milestones and were subsequently exercised in 2011. The remaining options will vest upon the final FDA approval of the first NDA submitted by us (or by our sublicensee) for palifosfamide. DEKK-Tec is entitled to receive single digit percentage royalty payments on the sales of palifosfamide should it be approved for commercial sale. Our obligation to pay royalties will terminate on a country-by-country basis upon the expiration of all valid claims of patents in such country covering licensed product, subject to earlier termination in the event of defaults by the parties under the license agreement.

License Agreement with Southern Research Institute

On December 22, 2004, we entered into an Option Agreement with the Southern Research Institute, or SRI, or the Option Agreement, pursuant to which we were granted an exclusive option to obtain an exclusive license to SRI s interest in certain intellectual property, including exclusive rights related to certain isophosphoramide mustard analogs.

Also on December 22, 2004, we entered into a Research Agreement with SRI pursuant to which we agreed to spend a sum not to exceed $200 thousand between the execution of the agreement and December 21, 2006, including a $25 thousand payment that was made simultaneously with the execution of the agreement, to fund research and development work by SRI in the field of isophosphoramide mustard analogs. The Option Agreement was exercised on February 13, 2007. Under the license agreement entered into upon exercise of the option, we are required to remit minimum annual royalty payments of $25 thousand until the first commercial sale of a licensed product. These payments were made for the years ended December 31, 2013, 2012, 2011, 2010, 2009 and 2008. We may be required to make payments upon achievement of certain milestones in varying amounts which on a cumulative basis could total up to $775 thousand. In addition, SRI will be entitled to receive single digit percentage royalty payments on the sales of a licensed product in any country until all licensed patents rights in that country which are utilized in the product have expired. No milestones under the license agreement were reached or expensed since the agreement s inception.

License Agreement with Baxter Healthcare Corporation

On November 3, 2006, we entered into a definitive Asset Purchase Agreement for indibulin and a License Agreement to proprietary nanosuspension technology with affiliates of Baxter Healthcare S.A. The purchase included the entire indibulin intellectual property portfolio as well as existing drug substance and capsule inventories. The terms of the Asset Purchase Agreement included an upfront cash payment of approximately $1.1 million and an additional $100 thousand payment for existing inventory, both of which were expensed in 2006. In addition to the upfront costs, the Asset Purchase Agreement includes additional diligence and milestone payments that could amount to approximately $8.0 million in the aggregate and royalties on net sales of products covered by a valid claim of a patent for the life of the patent on a country-by-country basis. We expensed a $625 thousand milestone payment upon the successful U.S. IND application for indibulin in 2007. The License Agreement requires payment of a $15 thousand annual patent and license prosecution/maintenance fee through the expiration of the last of the licensed patents which is expected to expire in 2025, and single digit royalties on net sales of licensed products covered by a valid claim of a patent for the life of the patent on a country-by-country basis. The term of the license agreement extends until the expiration of the last to expire of the patents covering the licensed products, subject to earlier termination in the event of defaults by the parties under the license agreement.

In October 2009, the Baxter License Agreement was amended to allow us to manufacture indibulin. No milestones under the license agreement were reached or expensed during the years ended December 31, 2011 or 2010. During each of the years ended December 31, 2013 and 2012, milestones of $250 thousand were reached and expensed.

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Exclusive Channel Partner Agreement with Intrexon Corporation

On January 6, 2011, we entered into an Exclusive Channel Partner Agreement, or the Channel Agreement, with Intrexon that governs a channel partnering arrangement in which we use Intrexon s technology directed towards *in vivo* expression of effectors in connection with the development of Ad-RTS-IL-12 + veledimex and DC-RTS-IL-12 + veledimex and generally to research, develop and commercialize products, in each case in which DNA is administered to humans for expression of anti-cancer effectors for the purpose of treatment or prophylaxis of cancer, which we collectively refer to as the Cancer Program. The Channel Agreement establishes committees comprised of representatives of us and Intrexon that govern activities related to the Cancer Program in the areas of project establishment, chemistry, manufacturing and controls, clinical and regulatory matters, commercialization efforts and intellectual property.

The Channel Agreement grants us a worldwide license to use patents and other intellectual property of Intrexon in connection with the research, development, use, importing, manufacture, sale, and offer for sale of products involving DNA administered to humans for expression of anti-cancer effectors for the purpose of treatment or prophylaxis of cancer, which we collectively refer to as the ZIOPHARM Products. Such license is exclusive with respect to any clinical development, selling, offering for sale or other commercialization of ZIOPHARM Products, and otherwise is non-exclusive. Subject to limited exceptions, we may not sublicense the rights described without Intrexon s written consent.

Under the Channel Agreement, and subject to certain exceptions, we are responsible for, among other things, the performance of the Cancer Program, including development, commercialization and certain aspects of manufacturing of ZIOPHARM Products. Intrexon is responsible for the costs of establishing manufacturing capabilities and facilities for the bulk manufacture of products developed under the Cancer Program, certain other aspects of manufacturing and costs of discovery-stage research with respect to platform improvements and costs of filing, prosecution and maintenance of Intrexon s patents.

Subject to certain expense allocations and other offsets provided in the Channel Agreement, we will pay Intrexon on a quarterly basis 50% of net profits derived in that quarter from the sale of ZIOPHARM Products, calculated on a ZIOPHARM Product-by-ZIOPHARM Product basis. We have likewise agreed to pay Intrexon on a quarterly basis 50% of revenue obtained in that quarter from a sublicensor in the event of a sublicensing arrangement. In addition, in partial consideration for each party s execution and delivery of the Channel Agreement, in January 2011 we entered into a Stock Purchase Agreement with Intrexon (see Note 2 to the financial statements, Financings).

Following the first 24 months of the agreement, Intrexon had the option to terminate the Channel Agreement if we failed to use diligent efforts to develop and commercialize ZIOPHARM Products or if we elected not to pursue the development of a Cancer Program identified by Intrexon that is a Superior Therapy as defined in the Channel Agreement. Also following the first 24 months of the agreement, we had the option to voluntarily terminate the Channel Agreement upon 90 days written notice to Intrexon. The 24 month termination period expired during the year ended December 31, 2013.

Upon termination of the Channel Agreement, we may continue to develop and commercialize any ZIOPHARM Product that, at the time of termination:

Is being commercialized by us;

Has received regulatory approval;

Is a subject of an application for regulatory approval that is pending before the applicable regulatory authority; or

Is the subject of at least an ongoing Phase 2 clinical trial (in the case of a termination by Intrexon due to an uncured breach or a voluntary termination by us), or an ongoing Phase 1 clinical trial in the field (in the case of a termination by us due to an uncured breach or a termination by Intrexon following an unconsented assignment by us or our election not to pursue development of a Superior Therapy).

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Our obligation to pay 50% of net profits or revenue described above with respect to these retained products will survive termination of the Channel Agreement.

Collaboration Agreement with Harmon Hill, LLC

On April 8, 2008, we signed a Collaboration Agreement for Harmon Hill, LLC, or Harmon Hill, to provide consulting and other services for the development and commercialization of oncology therapeutics by us. Under the agreement we have agreed to pay Harmon Hill $20 thousand per month for the consulting services and have further agreed to pay Harmon Hill (a) $500 thousand upon the first patient dosing of the Specified Drug, as defined in the Collaboration Agreement, in a pivotal trial, which trial uses a dosing Regime introduced by Harmon Hill; and (b) provided that the Specified Drug receives regulatory approval from the FDA, the European Medicines Agency or another regulatory agency for the marketing of the Specified Drug, a 1% royalty of our net sales will be awarded to Harmon Hill. If the Specified Drug is sublicensed to a third party, the agreement entitles Harmon Hill to 1% award of royalties or other payments received from a sublicense. Subject to renewal or extension by the parties, the term of the agreement was for a one year period that expired April 8, 2009. Following such expiration, the parties continued to operate under the terms of the agreement and, during 2010, the agreement was formally extended through April 8, 2011 and again through April 8, 2012. The agreement was extended through November 8, 2012 and has now expired. We expensed $240 thousand during the years ended December 31, 2011 and 2010, and $200 thousand during the year ended December 31, 2012 for consulting services per the aforementioned agreement. No milestones under the collaboration agreement were reached or expensed during the years ended December 31, 2013, 2012, 2011 or 2010.

On June 27, 2013, the Company signed a new collaboration agreement with Harmon Hill to provide consulting and other services for the development and commercialization of oncology therapeutics by ZIOPHARM, effective April 1, 2013. Under the agreement the Company has agreed to pay Harmon Hill $15 thousand per month for the consulting services. Subject to renewal or extension by the parties, the term of the agreement is for a one year period. The Company expensed $135 thousand for the year ended December 31, 2013.

Collaboration Agreement with Solasia Pharma K.K.

On March 7, 2011, we entered into a License and Collaboration Agreement with Solasia Pharma K.K., or Solasia.

Pursuant to the License and Collaboration Agreement, we granted Solasia an exclusive license to develop and commercialize darinaparsin in both IV and oral forms and related organic arsenic molecules, in all indications for human use in a pan- Asian/Pacific territory comprised of Japan, China, Hong Kong, Macau, Republic of Korea, Taiwan, Singapore, Australia, New Zealand, Malaysia, Indonesia, Philippines and Thailand.

As consideration for the license, we received an upfront payment of $5.0 million to be used exclusively for further clinical development of darinaparsin outside of the pan-Asian/Pacific territory, and will be entitled to receive additional payments of up to $32.5 million in development-based milestones and up to $53.5 million in sales-based milestones. We will also be entitled to receive double digit royalty payments from Solasia based upon net sales of licensed products in the applicable territories, once commercialized, and a percentage of sublicense revenues generated by Solasia.

The upfront payment for research and development funding is earned over the period of effort. We currently estimate this period to be 75 months, which could be adjusted in the future.

Under the License and Collaboration Agreement, we provide Solasia with drug product to conduct clinical trials. These transfers are accounted for as a reduction of research and development costs and an increase in collaboration

receivables.

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The agreement provides that Solasia will be responsible for the development and commercialization of darinaparsin in the pan-Asian/Pacific territory.

CRO Services Agreement with PPD Development, L.P.

We are party to a Master Clinical Research Organization Services Agreement with PPD Development, L.P., or PPD, dated January 29, 2010, a related work order dated June 25, 2010 and a related work order dated April 8, 2011 under which PPD provides clinical research organization, or CRO, services in support of our clinical trials. PPD is entitled to cumulative payments of up to $20.0 million under these arrangements, which is payable by us in varying amounts upon PPD achieving specified milestones. During the year ended December 31, 2010, we expensed $1.8 million upon contract execution and $1.1 million upon a clinical study commencement of enrollment in North America. During the year ended December 31, 2011, additional milestones related to commencing enrollment in Europe, Latin America and Asia along with enrollment based milestones were met and we recorded an aggregate $4.0 million expense. During the year ended December 31, 2012, additional enrollment-based and contract modification milestones were met and expensed totaling $3.8 million. During the year ended December 31, 2013, patient progression and data based milestones totaling $9.2 million were met and expensed.

CRO Services Agreement with Pharmaceutical Research Associates, Inc.

On December 13, 2011, we entered into a Master Clinical Research Organization Services Agreement with Pharmaceutical Research Associates, Inc., or PRA, under which PRA provides CRO services in support of our clinical trials. PRA is entitled to cumulative payments of up to $9.5 million under these arrangements, which is payable by us in varying amounts upon PRA achieving specified milestones. During the year ended December 31, 2012, we expensed $7.3 million upon the achievement of various letter of intent and enrollment-based milestones. During the year ended December 31, 2013, contract modification and patient enrollment based milestones totaling $2.2 million were met and expensed.

CRO Services Agreement with Novella Clinical, Inc.

On December 4, 2008, we entered into a Master Clinical Research Organization Services Agreement with Novella Clinical, Inc., or Novella, under which PRA provides CRO services in support of our clinical trials. The work order for the current trial being conducted by Novella was signed on November 2, 2012. Novella is entitled to cumulative payments of up to $790 thousand under these arrangements, which is payable by us in varying amounts upon Novella achieving specified milestones. During the year ended December 31, 2012, we expensed $256 thousand upon the achievement of various milestones. During the year ended December 31, 2013, two database related milestones and one site activation related milestone were met and expensed totaling $136 thousand.

Patents and Other Intellectual Property Rights and Protection.

Patents extend for varying periods according to the date of patent filing or grant and the legal term of patents in the various countries where patent protection is obtained. The actual protection offering by a patent, which can vary from country to country, depends of the type of patent, the scope of its coverage and the availability of legal remedies in the country.

Pursuant to the Drug Price Competition and Patent Term Restoration Act of 1984, referred to as the Hatch-Waxman Amendments, some of our patents, under certain conditions, may be eligible for limited patent term extension for a period of up to five years as compensation for patent term lost during drug development and the FDA regulatory review process. However, this extension period cannot be extended beyond 14 years from the drug s approval date.

The patent term restoration period is generally one-half the period of time elapsed between the effective date of an IND application or the issue date of the patent, whichever is later, and the submission

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date of an NDA, plus the period of time between the submission date of the NDA or the issue date of the patent, whichever is later, and FDA approval. The United States Patent and Trademark Office, in consultation with the FDA, reviews and approves applications for any patent term extension or restoration. We intend to seek the benefits of this statute, but there can be no assurance that we will be able to obtain any such benefits.

We also depend upon the skills, knowledge, and experience of our scientific and technical personnel, as well as those of our advisors, consultants, and other contractors, none of which is patentable. To help protect proprietary know-how, which is not patentable, and for inventions for which patents may be difficult to enforce, we currently rely, and in the future will continue to rely, on trade secret protection and confidentiality agreements to protect our interests. To this end, we generally require employees, consultants, advisors and other contractors to enter into confidentiality agreements that prohibit the disclosure of confidential information and, where applicable, require disclosure and assignment to us of the ideas, developments, discoveries and inventions important to our business.

Our patent position and proprietary rights are subject to certain risks and uncertainties. Please read the Risk Factors section of this report for information about certain risks and uncertainties that may affect our patent position and proprietary rights.

Additional information as of December 31, 2014 about material patents and other proprietary rights covering our product candidates is set forth below.

Palifosfamide

The patent estate covering palifosfamide compositions, methods of use, methods of manufacture, formulations, combination therapies and analogs includes five issued U.S. patents (one of which is scheduled to expire in 2031, two of which are scheduled to expire in 2029, one of which is scheduled to expire in 2027 and one of which is scheduled to expire in 2020), four pending U.S. patent applications, fifty-five issued foreign patents in Europe, Canada, Japan and Australia and six other countries and forty- four pending foreign patent applications in Europe, Canada, Japan, Australia and thirteen other countries. Some of these patent assets are in-licensed from DEKK-Tec, Inc., some are in-licensed from Southern Research Institute, and some are owned by us.

Ad-RTS-IL-12 + veledimex and DC-RTS-IL-12 + veledimex.

The patent estate licensed to us by Intrexon covering Ad-RTS-IL-12 + veledimex and DC-RTS-IL-12 + veledimex compositions, methods of use, methods of manufacture, and formulations includes thirty-two issued U.S. patents (one of which is scheduled to expire in 2030, one of which is scheduled to expire in 2029, one of which is scheduled to expire in 2027, three of which are scheduled to expire in 2026, four of which are scheduled to expire in 2025, four of which are scheduled to expire in 2024, three of which are scheduled to expire in 2023, nine of which are scheduled to expire in 2022, four of which are scheduled to expire in 2021, one of which is scheduled to expire in 2020 and one of which is scheduled to expire in 2018), forty-two pending U.S. patent applications, three-hundred-five issued foreign patents in Europe, Canada, Japan, Australia and ten other countries, and two-hundred-two pending foreign patent applications in Europe, Canada, Japan, Australia and fourteen other countries. The term of one or more of the issued patents may be extended due to the regulatory approval process.

Indibulin

The patent estate covering indibulin compositions, methods of use, methods of manufacture, formulations and combination therapies includes seven issued U.S. patents (three of which are scheduled to expire in 2017 and four of which are scheduled to expire in 2019), four pending U.S. patent applications, one-hundred-fifty-nine issued foreign

patents in Europe, Canada, Japan, Australia and sixteen other countries, and thirty-one pending foreign patent applications in Europe, Canada, Japan, Australia and eight other countries. Some of these patent assets are in-licensed from affiliates of Baxter Healthcare Corporation and some of which are owned by us.

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Darinaparsin

The patent estate covering darinaparsin compositions, methods of use, methods of manufacture, formulations, polymorphic forms, analogs and combination therapies includes eight issued U.S. patents (two of which are scheduled to expire in 2029, two of which are scheduled to expire in 2026, one of which is scheduled to expire in 2025 and three of which are scheduled to expire in 2023), five pending U.S. patent applications, twenty-six issued foreign patents in Europe, Japan, Australia and seven other countries and fifty-nine pending foreign patent applications in Europe, Canada, Japan, Australia and eleven other countries. Some of these patent assets are in-licensed from The University of Texas M. D. Anderson Cancer Center and the Texas A&M University System and some are owned by us.

Governmental Regulation

The research, development, testing, manufacture, labeling, promotion, advertising, distribution, and marketing, among other things, of our products are extensively regulated by governmental authorities in the United States and other countries. In the United States, the FDA regulates drugs under the Federal Food, Drug, and Cosmetic Act, or the FDCA, and biologics under the Public Health Service Act, or PSHA, as well as their respective implementing regulations. Failure to comply with the applicable U.S. requirements may subject us to administrative or judicial sanctions, such as FDA refusal to approve pending NDAs or Biologics License Applications, or BLAs, warning letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, and/or criminal prosecution. Moreover, if our product candidates are approved by the FDA, government coverage and reimbursement policies will both directly and indirectly affect our ability to successfully commercialize our product candidates, and such coverage and reimbursement policies will be affected by future healthcare reform measures. In addition, we may be subject to state and federal laws, including anti-kickback statutes and false claims statutes as well as data privacy laws that restrict certain business practices in the biopharmaceutical industry.

Product Approval Process. None of our product candidates may be marketed in the United States until it has received FDA approval. The steps required before a drug or biologic product may be marketed in the United States include:

Preclinical laboratory tests, animal studies, and formulation studies;

Submission to the FDA of an IND for human clinical testing, which must become effective before human clinical trials may begin;

Adequate and well-controlled human clinical trials to establish the safety and efficacy of the product for each indication;

Submission to the FDA of NDA or BLA;

Satisfactory completion of an FDA inspection of the manufacturing facility or facilities at which the product is produced to assess compliance with current good manufacturing practices, or cGMPs; and

FDA review and approval of the NDA or BLA.

Preclinical tests include laboratory evaluation of product chemistry, pharmacokinetics, toxicity, immunogenicity and formulation, as well as animal studies. The conduct of the preclinical tests and formulation of the products for testing must comply with federal regulations and requirements. The results of the preclinical tests, together with manufacturing information and analytical data, are submitted to the FDA as part of an IND application, which must become effective before human clinical trials may begin. An IND automatically takes effect 30 calendar days after receipt by the FDA, unless before that time the FDA applies a clinical hold and raises safety concerns or questions about issues such as the design of the trials as outlined in the IND. In such a case, the IND sponsor and the FDA must resolve any outstanding FDA concerns or questions before clinical trials may proceed. We cannot be certain that submission of an IND will result in the FDA allowing a clinical trial to be initiated.

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Clinical trials involve the administration of an investigational drug or biologic to human subjects under the supervision of qualified investigators. Clinical trials are conducted according to protocols that detail the study objectives, the parameters to be used in monitoring participants safety, and the effectiveness criteria by which the investigational product will be evaluated. Each protocol must be submitted to the FDA as part of the IND.

Clinical trials are typically conducted in three sequential phases, but the phases may overlap. The study protocol and informed consent information for study subjects in a clinical trial must also be approved by an Institutional Review Board for each institution where the trial will be conducted. Study subjects must sign an informed consent form before participating in a clinical trial. Phase 1 usually involves the initial introduction of the investigational product into people to evaluate its short-term safety, dosage tolerance, metabolism, pharmacokinetics, and pharmacologic actions and, if possible, to gain an early indication of its effectiveness. Phase 2 usually involves trials in a limited patient population in order to (1) evaluate dosage tolerance and appropriate dosage; (2) identify possible adverse effects and safety risks; and (3) evaluate preliminarily the efficacy of the drug for specific indications. Phase 3 trials usually continue to evaluate clinical efficacy and further test for safety by using the product in its final form in an expanded patient population. There can be no assurance that Phase 1, Phase 2, or Phase 3 testing will be completed successfully within any specified period of time, if at all. Furthermore, the sponsoring company or the FDA may suspend clinical trials at any time on various grounds, including a finding that the subjects or patients are being exposed to an unacceptable health risk.

The FDCA permits the FDA and the IND sponsor to agree in writing on the design and size of clinical studies intended to form the primary basis of a claim of effectiveness in an NDA or BLA. This process is known as Special Protocol Assessment, or SPA, and can be a somewhat lengthy process. An agreement may not be changed by the sponsor or the FDA after the trial begins, except (1) with the written agreement of the sponsor and the FDA, or (2) if the director of the FDA reviewing division determines that a substantial scientific issue essential to determining the safety or effectiveness of the drug was identified after the testing began.

Assuming successful completion of the required clinical testing, the results of the preclinical studies and of the clinical studies, together with other detailed information, including information on the manufacture and composition of the product candidate, are submitted to the FDA in the form of an NDA or BLA requesting approval to market the product for one or more indications. The testing and approval process requires substantial time, effort, and financial resources. The FDA reviews the application and may deem it to be inadequate to support the registration, and companies cannot be sure that any approval will be granted on a timely basis, if at all. The FDA may also refer the application to the appropriate external advisory committee, typically a panel of clinicians, for review, evaluation and a recommendation as to whether the application should be approved. The FDA is not bound by the recommendations of the advisory committee.

The goals of the NDA/BLA are to provide enough information to permit FDA to reach the following key decisions:

Is the product safe and effective in its proposed use(s), and do its benefits outweigh its risks?

Is the product s proposed labeling (package insert) appropriate, and what should it contain? Are measures necessary to mitigate risks of use of the product (referred to as Risk Evaluation and Mitigation Strategies, or REMS)?

Are the methods used in manufacturing the product and the controls used to maintain its quality adequate to preserve identity, strength, quality, and purity?

The FDA has various programs, including orphan drug, fast track, priority review, and accelerated approval, which are intended to expedite or simplify the process for developing and reviewing drugs, and/or provide for approval on the basis surrogate endpoints, or provide financial incentives and market exclusivity. Generally, drugs that may be eligible for one or more of these programs are those for serious or life-threatening conditions, those with the potential to address unmet medical needs, and those that provide meaningful benefit over existing treatments. A company cannot be certain that any of its investigational drugs will qualify for any of these programs, or that, if a drug does qualify, the review time will be reduced.

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Before approving an NDA or BLA, the FDA usually will inspect the facility or the facilities at which the drug is manufactured and will not approve the product unless cGMP compliance is satisfactory. If the FDA evaluates the NDA or BLA and the manufacturing facilities and deems them to be acceptable, the FDA may issue an approval letter, or in many cases, a complete response letter. The complete response letter contains the conditions that must be met in order to secure final approval of the NDA or BLA. When and if those conditions have met with the FDA s satisfaction, the FDA will issue an approval letter. The approval letter authorizes commercial marketing of the drug or biologic for specific indications. As a condition of NDA/BLA approval, the FDA may require post-marketing testing and surveillance to monitor the drug s safety or efficacy, or impose other conditions.

After approval, certain changes to the approved drug product, such as adding new indications, initiating certain manufacturing changes, or making certain additional labeling claims, are subject to further FDA review and approval. Before a company can market a drug product for any additional indication(s), it must obtain additional approval from the FDA. Obtaining approval for a new indication generally requires that additional clinical studies be conducted. A company cannot be sure that any additional approval for new indications for any product candidate will be approved on a timely basis, or at all.

Post-approval Requirements. Often times, even after a drug has been approved by the FDA for sale, the FDA may require that certain post-approval requirements be satisfied, including the conduct of additional clinical studies. If such post-approval conditions are not satisfied, the FDA may withdraw its approval of the drug. In addition, holders of an approved NDA are required to: (1) report certain adverse reactions to the FDA; (2) comply with certain requirements concerning advertising and promotional labeling for their products; and (3) continue to have quality control and manufacturing procedures conform to cGMP. The FDA periodically inspects the sponsor s records relating to safety reporting and/or manufacturing facilities; this latter effort includes assessment of cGMP compliance. Accordingly, manufacturers must continue to expend time, money, and effort in the area of production and quality control to maintain cGMP compliance. We intend to use third-party manufacturers to produce our products in clinical and commercial quantities, and future FDA inspections may identify compliance issues at the facilities of our contract manufacturers that may disrupt production or distribution, or require substantial resources to correct. In addition, discovery of problems with a product after approval may result in restrictions on a product, manufacturer, or holder of an approved NDA or BLA, including withdrawal of the product from the market.

Patent Challenge Process Regarding ANDAs. The Hatch-Waxman Act provides incentives for generic pharmaceutical manufacturers to challenge patents on branded pharmaceutical products and/or their methods of use, as well as to develop products comprising non-infringing forms of the patented drugs. The Hatch-Waxman legislation places significant burdens on the Abbreviated New Drug Application, or ANDA, filer to ensure that such challenges are not frivolous, but also offers the opportunity for significant financial reward if the challenge is successful.

If there is a patent listed for the branded drug in the FDA s Orange Book at the time of submission of the ANDA or at any time before the ANDA is approved and the generic company intends to market the generic equivalent prior to the expiration of that patent, the generic company includes a certification asserting that the patent is invalid, unenforceable and/or not infringed, a so-called paragraph IV certification.

After receiving notice from the FDA that its application is acceptable for review or immediately if the ANDA has been amended to include a paragraph IV certification after the application was submitted to the FDA, the company filing a generic application is required to send the patent holder and the holder of the NDA for the brand-name drug a notice explaining why it believes that the patents in question are invalid, unenforceable or not infringed. Upon receipt of the notice from the generic applicant, the patent holder has 45 days during which to bring a patent infringement suit in federal district court against the generic applicant in order to obtain the 30 month automatic stay.

If a suit is commenced by the patent holder during the 45-day period, the Hatch-Waxman Act provides for an automatic stay on the FDA s ability to grant final approval of the ANDA for the generic product. Patent holders

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may only obtain one 30-month stay with respect to patents that were listed at the time an ANDA was filed. The period during which the FDA may not approve the ANDA and the patent challenger therefore may not market the generic product is 30 months, or such other period as may be ordered by the court. The 30-month period may or may not, and often does not, coincide with the timing of the resolution of the lawsuit or the expiration of a patent, but if the patent challenge is successful or the challenged patent expires during the 30-month period, the FDA may approve the generic drug for marketing, assuming there are no other obstacles to approval such as periods of non-patent exclusivity given to the NDA holder.

Under the Hatch-Waxman Act, any developer of a generic drug that is considered first to have filed its ANDA for review by the FDA, and whose filing includes a paragraph IV certification, may be eligible to receive a 180-day period of generic market exclusivity. This period of market exclusivity may provide the patent challenger with the opportunity to earn a return on the risks taken and its legal and development costs and to build its market share before other generic competitors can enter the market. If the ANDA of the first applicant accepted for filing is withdrawn, the 180-day exclusivity period is forfeited and unavailable to any other applicant.

Coverage and Reimbursement. Market acceptance and sales of any product candidates that we develop will depend on coverage and reimbursement policies of third-party payors and may be affected by future healthcare reform measures. Government health administration authorities, private health insurers and other organizations generally decide which drugs they will pay for and establish reimbursement levels for health care. In particular, in the U.S., private health insurers and other third-party payers often provide reimbursement for products and services based on the level at which the government (through the Medicare or Medicaid programs) provides reimbursement for such treatments. In the U.S., the European Union and other potentially significant markets for our product candidates, government authorities and third-party payers are increasingly attempting to limit or regulate the price of medical products and services, particularly for new and innovative products and therapies, which has resulted in lower average selling prices. Further, the increased emphasis on managed healthcare in the U.S. and on country and regional pricing and reimbursement controls in the European Union will put additional pressure on product pricing, reimbursement and usage, which may adversely affect our future product sales and results of operations. These pressures can arise from rules and practices of managed care groups, judicial decisions and governmental laws and regulations related to Medicare, Medicaid and healthcare reform, pharmaceutical reimbursement policies and pricing in general.

In the United States and foreign jurisdictions, there have been a number of legislative and regulatory changes to the healthcare system that could affect our future results of operations. In particular, there have been and continue to be a number of initiatives at the United States federal and state level that seek to reduce healthcare costs. The Medicare Prescription Drug, Improvement, and Modernization Act of 2003, or the MMA, imposed new requirements for the distribution and pricing of prescription drugs for Medicare beneficiaries. Under Part D, Medicare beneficiaries may enroll in prescription drug plans offered by private entities which provide coverage of outpatient prescription drugs. Part D plans include both stand-alone prescription drug benefit plans and prescription drug coverage as a supplement to Medicare Advantage plans. Unlike Medicare Part A and B, Part D coverage is not standardized. Part D prescription drug plan sponsors are not required to pay for all covered Part D drugs, and each drug plan can develop its own drug formulary that identifies which drugs it will cover and at what tier or level. However, Part D prescription drug formularies must include drugs within each therapeutic category and class of covered Part D drugs, though not necessarily all the drugs in each category or class. Any formulary used by a Part D prescription drug plan must be developed and reviewed by a pharmacy and therapeutic committee. Government payment for some of the costs of prescription drugs may increase demand for our products for which we receive marketing approval. However, any negotiated prices for our future products covered by a Part D prescription drug plan will likely be lower than the prices we might otherwise obtain. Moreover, while the MMA applies only to drug benefits for Medicare beneficiaries, private payors often follow Medicare coverage policy and payment limitations in setting their own payment rates. Any reduction in payment that results from Medicare Part D may result in a similar reduction in payments from

non-governmental payors.

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The American Recovery and Reinvestment Act of 2009 provides funding for the federal government to compare the effectiveness of different treatments for the same illness. A plan for the research will be developed by the Department of Health and Human Services, the Agency for Healthcare Research and Quality and the National Institutes for Health, and periodic reports on the status of the research and related expenditures will be made to Congress. Although the results of the comparative effectiveness studies are not intended to mandate coverage policies for public or private payors, it is not clear what effect, if any, the research will have on the sales of any product, if any such product or the condition that it is intended to treat is the subject of a study. It is also possible that comparative effectiveness research demonstrating benefits in a competitor s product could adversely affect the sales of our product candidates. If third-party payors do not consider our products to be cost-effective compared to other available therapies, they may not cover our products as a benefit under their plans or, if they do, the level of payment may not be sufficient to allow us to sell our products on a profitable basis.

The U.S. and some foreign jurisdictions are considering or have enacted a number of additional legislative and regulatory proposals to change the healthcare system in ways that could affect our ability to sell our products profitably. Among policy makers and payers in the U.S. and elsewhere, there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality and/or expanding access. In the U.S., the pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives, including, most recently, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act, or collectively, the PPACA, which became law in the U.S. in March 2010 and substantially changes the way healthcare is financed by both governmental and private insurers.

Federal and State Fraud and Abuse Laws. In addition to FDA restrictions on marketing of pharmaceutical products, several other types of state and federal laws have been applied to restrict certain business practices in the biopharmaceutical industry in recent years. These laws include anti-kickback and false claims statutes.

The federal Anti-Kickback Statute prohibits, among other things, knowingly and willfully offering, paying, soliciting, or receiving remuneration to induce or in return for purchasing, leasing, ordering, or arranging for the purchase, lease, or order of any healthcare item or service reimbursable under Medicare, Medicaid, or other federally financed healthcare programs. The term remuneration has been broadly interpreted to include anything of value, including for example, gifts, discounts, the furnishing of supplies or equipment, credit arrangements, payments of cash, waivers of payment, ownership interests and providing anything at less than its fair market value. The Anti-Kickback Statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on one hand and prescribers, purchasers, and formulary managers on the other. Although there are a number of statutory exemptions and regulatory safe harbors protecting certain common activities from prosecution, the exemptions and safe harbors are drawn narrowly, and our practices may not in all cases meet all of the criteria for statutory exemptions or safe harbor protection. Practices that involve remuneration that may be alleged to be intended to induce prescribing, purchases, or recommendations may be subject to scrutiny if they do not qualify for an exemption or safe harbor. Several courts have interpreted the statute s intent requirement to mean that if any one purpose of an arrangement involving remuneration is to induce referrals of federal healthcare covered business, the statute has been violated. The reach of the Anti-Kickback Statute was also broadened by the PPACA, which, among other things, amends the intent requirement of the federal Anti-Kickback Statute. Pursuant to the statutory amendment, a person or entity no longer needs to have actual knowledge of this statute or specific intent to violate it in order to have committed a violation. In addition, the PPACA provides that the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the civil False Claims Act (discussed below) or the civil monetary penalties statute, which imposes penalties against any person who is determined to have presented or caused to be presented a claim to a federal health program that the person knows or should know is for an item or service that was not provided as claimed or is false or fraudulent.

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The federal False Claims Act prohibits any person from knowingly presenting, or causing to be presented, a false claim for payment to the federal government or knowingly making, using, or causing to be made or used a false record or statement material to a false or fraudulent claim to the federal government. As a result of a modification made by the Fraud Enforcement and Recovery Act of 2009, a claim includes any request or demand for money or property presented to the U.S. government. Recently, several pharmaceutical and other healthcare companies have been prosecuted under these laws for allegedly providing free product to customers with the expectation that the customers would bill federal programs for the product. Other companies have been prosecuted for causing false claims to be submitted because of the companies marketing of the product for unapproved, and thus non-reimbursable, uses. Many states also have statutes or regulations similar to the federal Anti-Kickback Statute and False Claims Act, which state laws apply to items and services reimbursed under Medicaid and other state programs, or, in several states, apply regardless of the payer. Also, the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, created new federal criminal statutes that prohibit knowingly and willfully executing a scheme to defraud any healthcare benefit program, including private third-party payers and knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement in connection with the delivery of or payment for healthcare benefits, items or services.

Because of the breadth of these laws and the narrowness of the federal Anti-Kickback Statute s safe harbors, it is possible that some of our business activities could be subject to challenge under one or more of such laws. Such a challenge could have a material adverse effect on our business, financial condition and results of operations. If we obtain FDA approval for any of our product candidates and begin commercializing those products in the United States, our operations may be directly, or indirectly, through our customers, distributors, or other business partners, subject to various federal and state fraud and abuse laws, including, without limitation, anti-kickback statutes and false claims statutes. These laws may impact, among other things, our proposed sales, marketing and education programs.

In addition, we may be subject to data privacy and security regulation by both the federal government and the states in which we conduct our business. HIPAA, as amended by the Health Information Technology and Clinical Health Act, or HITECH, and its implementing regulations, imposes certain requirements relating to the privacy, security and transmission of individually identifiable health information. Among other things, HITECH makes HIPAA s privacy and security standards directly applicable to business associates independent contractors or agents of covered entities that receive or obtain protected health information in connection with providing a service on behalf of a covered entity. HITECH also increased the civil and criminal penalties that may be imposed against covered entities, business associates and possibly other persons, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorney s fees and costs associated with pursuing federal civil actions. In addition, state laws govern the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts.

If our operations are found to be in violation of any of the federal and state laws described above or any other governmental regulations that apply to us, we may be subject to penalties, including criminal and significant civil monetary penalties, damages, fines, imprisonment, exclusion of products from reimbursement under government programs, and the curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our results of operations. To the extent that any of our product candidates are ultimately sold in a foreign country, we may be subject to similar foreign laws and regulations, which may include, for instance, applicable post-marketing requirements, including safety surveillance, anti-fraud and abuse laws, and implementation of corporate compliance programs and reporting of payments or transfers of value to healthcare professionals.

Employees

As of February 10, 2014 we had 43 employees.

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Corporate Information

We were originally incorporated in Colorado in September 1998 (under the name Net Escapes, Inc.) and later changed our name to EasyWeb, Inc. in February 1999. We re-incorporated in Delaware on May 16, 2005 under the same name. On September 13, 2005, we completed a reverse acquisition of privately held ZIOPHARM, Inc., a Delaware corporation. To effect this transaction, we caused ZIO Acquisition Corp., our wholly-owned subsidiary, to merge with and into ZIOPHARM, Inc., with ZIOPHARM, Inc. surviving as our wholly owned subsidiary. In accordance with the terms of the merger, the outstanding common stock of ZIOPHARM, Inc. automatically converted into the right to receive an aggregate of approximately 97.3% of our outstanding common stock (after giving effect to the transaction). Following the merger, we caused ZIOPHARM, Inc. to merge with and into us and we changed our name to ZIOPHARM Oncology, Inc. Although EasyWeb, Inc. was the legal acquirer in the transaction, we accounted for the transaction as a reverse acquisition under generally accepted accounting principles. As a result, ZIOPHARM, Inc. became the registrant with the Securities and Exchange Commission, or the SEC, and the historical financial statements of ZIOPHARM, Inc. became our historical financial statements.

Our principal executive offices are located at One First Avenue, Parris Building 34, Navy Yard Plaza, Boston, Massachusetts 02129, and our telephone number is (617) 259-1970. Our internet site is www.ziopharm.com. None of the information on our internet site is part of this report, unless expressly noted.

Available Information

Our website address is www.ziopharm.com. Information contained on our website is not incorporated by reference into this report unless expressly noted. We file reports with the SEC, which we make available on our website free of charge. These reports include annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to such reports, each of which is provided on our website as soon as reasonably practicable after we electronically file such materials with or furnish them to the SEC. You can also read and copy any materials we file with the SEC at the SEC s Public Reference Room at 100 F Street, N.E., Washington, DC 20549. You can obtain additional information about the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. In addition, the SEC maintains a website (www.sec.gov) that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC, including us.

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Item 1A. Risk Factors

An investment in our common stock is very risky. In addition to the other information in this annual report on Form 10-K, you should consider carefully the following risk factors in evaluating us and our business. If any of the events described in the following risk factors were to occur, our business, financial condition, results of operation and future growth prospects would likely be materially and adversely affected. In that event, the trading price of our common stock could decline and you could lose all or a part of your investment in our common stock. Therefore, we urge you to carefully review this entire report and consider the risk factors discussed below. Moreover, the risks described below are not the only ones that we face. Additional risks not presently known to us or that we currently deem immaterial may also affect our business, financial condition, operating results or prospects.

RISKS RELATED TO OUR BUSINESS

We will require additional financial resources in order to continue ongoing development of our product candidates; if we are unable to obtain these additional resources, we may be forced to delay or discontinue clinical testing of our product candidates.

We have not generated significant revenue and have incurred significant net losses in each year since our inception. For the year ended December 31, 2013, we had a net loss of $57.1 million, and, as of December 31, 2013, we have incurred approximately $340.8 million of cumulative net losses since our inception in 2003. We expect to continue to incur significant operating expenditures and net losses. Further development of our product candidates, including product candidates that we may develop under our Channel Agreement with Intrexon, will likely require substantial increases in our expenses as we:

Continue to undertake clinical trials for product candidates;

Scale-up the formulation and manufacturing of our product candidates;

Seek regulatory approvals for product candidates;

Implement additional internal systems and infrastructure; and

Hire additional personnel.

We continue to seek additional financial resources to fund the further development of our product candidates. If we are unable to obtain sufficient additional capital, one or more of these programs could be placed on hold. Because we are currently devoting a significant portion of our resources to the development of synthetic biology and our adaptive Phase 3 trial for first-line SCLC for IV palifosfamide, MATISSE, further progress with the development of our other candidates may be significantly delayed and may depend on the licensing of those compounds to third parties.

We anticipate that our cash resources will be sufficient to fund our operations into the second quarter of 2015 and we have no current committed sources of additional capital. We do not know whether additional financing will be

available on terms favorable or acceptable to us when needed, if at all. Our business is highly cash-intensive and our ability to continue operations after our current cash resources are exhausted depends on our ability to obtain additional financing and/or achieve profitable operations, as to which no assurances can be given. If adequate additional funds are not available when required, or if we are unsuccessful in entering into partnership agreements for the further development of our products, we will be required to delay, reduce or eliminate planned preclinical and clinical trials and may be forced to terminate the approval process for our product candidates from the FDA or other regulatory authorities. In addition, we could be forced to discontinue product development, forego attractive business opportunities or pursue merger or divestiture strategies. In the event we are unable to obtain additional financing, we may be forced to cease operations altogether.

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We need to raise additional capital to fund our operations. The manner in which we raise any additional funds may affect the value of your investment in our common stock.

As of December 31, 2013, we had incurred approximately $340.8 million of cumulative net losses and had approximately $68.2 million of cash and cash equivalents. We anticipate that our cash resources will be sufficient to fund our operations into the second quarter of 2015. Following negative results in our PICASSO 3 pivotal trial in first-line metastatic soft tissue sarcoma, or STS, in March 2013, we implemented a workforce reduction plan and other cost-cutting measures in an attempt to extend our cash resources as long as possible, though there are no assurances that such efforts will be effective. In addition, changes may occur that would consume our existing capital prior to the second quarter of 2015, including expansion of the scope of, and/or slower than expected progress of, our research and development efforts and changes in governmental regulation. Actual costs may ultimately vary from our current expectations, which could materially impact our use of capital and our forecast of the period of time through which our financial resources will be adequate to support our operations. We have estimated the sufficiency of our cash resources based in part on the discontinuation of the PICASSO 3 pivotal trial for first-line metastatic STS and our adaptive Phase 3 trial for first-line SCLC for IV palifosfamide and our current timing expectations for the interim analysis of data in the MATISSE trial. Also our estimates include the advancement of our synthetic biology product candidates in the clinic under our Channel Agreement with Intrexon, and we expect that the costs associated with these and additional product candidates will increase the level of our overall research and development expenses significantly going forward.

In addition to above factors, our actual cash requirements may vary materially from our current expectations for a number of other factors that may include, but are not limited to, changes in the focus and direction of our development programs, competitive and technical advances, costs associated with the development of our product candidates, our ability to secure partnering arrangements, and costs of filing, prosecuting, defending and enforcing our intellectual property rights. If we exhaust our capital reserves more quickly than anticipated, regardless of the reason, and we are unable to obtain additional financing on terms acceptable to us or at all, we will be unable to proceed with development of some or all of our product candidates on expected timelines and will be forced to prioritize among them.

The unpredictability of the capital markets may severely hinder our ability to raise capital within the time periods needed or on terms we consider acceptable, if at all. Moreover, if we fail to advance one or more of our current product candidates to later-stage clinical trials, successfully commercialize one or more of our product candidates, or acquire new product candidates for development, we may have difficulty attracting investors that might otherwise be a source of additional financing.

Our need for additional capital and limited capital resources may force us to accept financing terms that could be significantly dilutive to existing stockholders. To the extent that we raise additional capital by issuing equity securities, our stockholders may experience dilution. In addition, we may grant future investors rights superior to those of our existing stockholders. If we raise additional funds through collaborations and licensing arrangements, it may be necessary to relinquish some rights to our technologies, product candidates or products, or grant licenses on terms that are not favorable to us. If we raise additional funds by incurring debt, we could incur significant interest expense and become subject to covenants in the related transaction documentation that could affect the manner in which we conduct our business.

Clinical trials are very expensive, time-consuming, and difficult to design and implement.

Human clinical trials are very expensive and difficult to design and implement, in part because they are subject to rigorous regulatory requirements. The clinical trial process itself is also time-consuming and results are inherently

uncertain. We estimate that clinical trials of our product candidates will take at least several years to complete. Furthermore, failure can occur at any stage of the trials, and we could encounter problems that cause us to abandon or repeat clinical trials. The commencement and completion of clinical trials may be delayed by several factors, including:

Unforeseen safety issues;

Determination of dosing issues;

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Lack of effectiveness during clinical trials;

Slower than expected rates of patient recruitment and enrollment;

Inability to monitor patients adequately during or after treatment;

Inability or unwillingness of medical investigators to follow our clinical protocols; and

Regulatory determinations to temporarily or permanently cease enrollment for other reasons not related to patient safety.

Success in preclinical testing and early clinical trials does not ensure that later clinical trials will be successful. For example, despite positive findings in earlier clinical trials, our product candidate palifosfamide failed to meet the primary endpoint of the Phase 3 PICASSO 3 trail. In addition, we or the FDA may suspend our clinical trials at any time if it appears that we are exposing participants to unacceptable health risks or if the FDA finds deficiencies in our Investigational New Drug, or IND, submission or in the conduct of these trials.

See also Risk Factors *Our product candidates are in various stages of clinical trials, which are very expensive and time-consuming. We cannot be certain when we will be able to file an NDA or BLA with the FDA and any failure or delay in completing clinical trials for our product candidates could harm our business*.

We may not be able to obtain or maintain orphan drug exclusivity for our product candidates.

We have received Orphan Drug designations for darinaparsin for the treatment of peripheral T-cell lymphoma in both the United States and Europe, and we may be able to receive additional Orphan Drug designation from the FDA and the European Medicines Agency, or EMA, for other product candidates. In the United States, orphan designation is available to drugs intended to treat, diagnose or prevent a rare disease or condition that affects fewer than 200,000 people in the United States at the time of application for orphan designation. Orphan designation qualifies the sponsor of the product for a tax credit and marketing incentives. The first sponsor to receive FDA marketing approval for a drug with an orphan designation is entitled to a seven-year exclusive marketing period in the United States for that product for that indication and, typically, a waiver of the prescription drug user fee for its marketing application. However, a drug that the FDA considers to be clinically superior to, or different from, the approved orphan drug, even though for the same indication, may also obtain approval in the United States during the seven-year exclusive marketing period. Orphan drug exclusive marketing rights may also be lost if the FDA later determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantity of the drug. There is no guarantee that any of our other product candidates will receive Orphan Drug designation or that, even if such product candidate is granted such status, the product candidate s clinical development and regulatory approval process will not be delayed or will be successful.

We may not be able to commercialize any products, generate significant revenues, or attain profitability.

To date, none of our product candidates have been approved for commercial sale in any country. The process to develop, obtain regulatory approval for, and commercialize potential drug candidates is long, complex, and costly. Unless and until we receive approval from the FDA and/or other regulatory authorities for our product candidates, we cannot sell our drugs and will not have product revenues. Even if we obtain regulatory approval for one or more of our

product candidates, if we are unable to successfully commercialize our products, we may not be able to generate sufficient revenues to achieve or maintain profitability, or to continue our business without raising significant additional capital, which may not be available. Our failure to achieve or maintain profitability could negatively impact the trading price of our common stock.

Ethical, legal and social concerns about synthetic biologically engineered products could limit or prevent the use of our product candidates.

Our products candidates use a synthetic biology platform. Public perception about the safety and environmental hazards of, and ethical concerns over, genetically engineered products could influence public acceptance of our product candidates. If we and our collaborators are not able to overcome the ethical, legal and social concerns

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relating to synthetic biological engineering, our product candidates may not be accepted. These concerns could result in increased expenses, regulatory scrutiny, delays or other impediments to the public acceptance and commercialization of our product candidates. Our ability to develop and commercialize products could be limited by public attitudes and governmental regulation.

Our use of synthetic biology to develop product candidates may become subject to increasing regulation in the future.

Most of the laws and regulations concerning synthetic biology relate to the end products produced using synthetic biology, but that may change. For example, the Presidential Commission for the Study of Bioethical Issues in December 2010 recommended that the federal government oversee, but not regulate, synthetic biology research. The Presidential Commission also recommended that the government lead an ongoing review of developments in the synthetic biology field and that the government conduct a reasonable risk assessment before the field release of synthetic organisms. Synthetic biology may become subject to additional government regulations as a result of the recommendations, which could require us to incur significant additional capital and operating expenditures and other costs in complying with these laws and regulations.

The technology on which our Channel Agreement with Intrexon Corporation is based in part on early stage technology in the field of human oncologic therapeutics.

Our Channel Agreement with Intrexon contemplates our using Intrexon s advanced transgene engineering platform for the controlled and precise cellular production of anti-cancer effectors. The synthetic biology effector platform in which we have acquired rights represents early-stage technology in the field of human oncologic biotherapeutics, with DC-RTS-IL-12 + veledimex having completed a Phase 1 study in melanoma and Ad-RTS-IL-12 + veledimex currently in two Phase 2 studies, in melanoma and breast cancer. Although we plan to leverage Intrexon s synthetic biology platform for additional products targeting key pathways used by cancers to grow and metastasize, we may not be successful in developing and commercializing these products for a variety of reasons. The risk factors set forth herein that apply to our small molecule drug candidates, which are in various stages of development, also apply to product candidates that we seek to develop under our Channel Agreement with Intrexon.

We will incur additional expenses in connection with our Channel Agreement with Intrexon Corporation.

The synthetic biology platform, in which we have acquired rights for cancer from Intrexon, includes two existing product candidates, Ad-RTS-IL-12 + veledimex and DC-RTS-IL-12 + veledimex. Upon entry into the Channel Agreement with Intrexon, we assumed responsibility for the clinical development of these product candidates, which we expect will increase the level of our overall research and development expenses significantly going forward. Although all human clinical trials are expensive and difficult to design and implement, we believe that due to complexity, costs associated with clinical trials for synthetic biology products are greater than the corresponding costs associated with clinical trials for small molecule candidates. In addition to increased research and development costs, prior to the adoption of our March 2013 workforce reduction plan we added headcount in part to support our Channel Agreement endeavors, and we may need to do so again in the future which would add to our general and administrative expenses going forward.

Although our forecasts for expenses and the sufficiency of our capital resources takes into account our plans to develop the Intrexon products, we assumed development responsibility for these products on January 6, 2011, and the actual costs associated therewith may be significantly in excess of forecasted amounts. In addition to the amount and timing of expenses related to the clinical trials, our actual cash requirements may vary materially from our current expectations for a number of other factors that may include, but are not limited to, changes in the focus and direction

of our development programs, competitive and technical advances, costs associated with the development of our product candidates and costs of filing, prosecuting, defending and enforcing our intellectual property rights. If we exhaust our capital reserves more quickly than anticipated, regardless of the

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reason, and we are unable to obtain additional financing on terms acceptable to us or at all, we will be unable to proceed with development of some or all of our product candidates on expected timelines and will be forced to prioritize among them.

We may not be able to retain the exclusive rights licensed to us by Intrexon Corporation to develop and commercialize products involving DNA administered to humans for expression of anti-cancer effectors for the purpose of treatment or prophylaxis of cancer.

Under the Channel Agreement, we use Intrexon s technology directed towards in vivo expression of effectors in connection with the development of Ad-RTS-IL-12 + veledimex and DC-RTS-IL-12 + veledimex and generally to research, develop and commercialize products, in each case in which DNA is administered to humans for expression of anti-cancer effectors for the purpose of treatment or prophylaxis of cancer, which we collectively refer to as the Cancer Program. The Channel Agreement grants us a worldwide license to use patents and other intellectual property of Intrexon in connection with the research, development, use, importing, manufacture, sale, and offer for sale of products involving DNA administered to humans for expression of anti-cancer effectors for the purpose of treatment or prophylaxis of cancer, which we refer to collectively as the ZIOPHARM Products. Such license is exclusive with respect to any clinical development, selling, offering for sale or other commercialization of ZIOPHARM Products, and otherwise is non-exclusive. Subject to limited exceptions, we may not sublicense the rights described without Intrexon s written consent. Under the Channel Agreement, and subject to certain exceptions, we are responsible for, among other things, the performance of the Cancer Program, including development, commercialization and certain aspects of manufacturing of ZIOPHARM Products.

Intrexon may terminate the Channel Agreement if we fail to use diligent efforts to develop and commercialize ZIOPHARM Products or if we elect not to pursue the development of a Cancer Program identified by Intrexon that is a Superior Therapy as defined in the Channel Agreement. We may voluntarily terminate the Channel Agreement upon 90 days written notice to Intrexon. Upon termination of the Channel Agreement, we may continue to develop and commercialize any ZIOPHARM Product that, at the time of termination:

- Is being commercialized by us;
- Has received regulatory approval;
- Is a subject of an application for regulatory approval that is pending before the applicable regulatory authority; or
- Is the subject of at least an ongoing Phase 2 clinical trial (in the case of a termination by Intrexon due to an uncured breach or a voluntary termination by us), or an ongoing Phase 1 clinical trial in the field (in the case of a termination by us due to an uncured breach or a termination by Intrexon following an unconsented assignment by us or our election not to pursue development of a Superior Therapy).

Our obligation to pay 50% of net profits or revenue as described further under the heading *Business License Agreements, Intellectual Property and Other Agreements Exclusive Channel Partner Agreement with Intrexon Corporation* with respect to these retained products will survive termination of the Channel Agreement.

There can be no assurance that we will be able to successfully perform under the Channel Agreement and if the Channel Agreement is terminated it may prevent us from achieving our business objectives.

We have a limited operating history upon which to base an investment decision.

We are a development-stage company that was incorporated in September 2003. To date, we have not demonstrated an ability to perform the functions necessary for the successful commercialization of any product candidates. The successful commercialization of any product candidates will require us to perform a variety of functions, including:

Continuing to undertake preclinical development and clinical trials;

Participating in regulatory approval process;

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Formulating and manufacturing products; and

Conducting sales and marketing activities.

Our operations have been limited to organizing and staffing our company, acquiring, developing and securing our proprietary product candidates, and undertaking preclinical and clinical trials of our product candidates. These operations provide a limited basis for you to assess our ability to commercialize our product candidates and the advisability of investing in our securities.

Because we currently neither have nor intend to establish internal research capabilities, we are dependent upon pharmaceutical and biotechnology companies and academic and other researchers to sell or license us their product candidates and technology.

Proposing, negotiating, and implementing an economically viable product acquisition or license is a lengthy and complex process. We compete for partnering arrangements and license agreements with pharmaceutical, biopharmaceutical, and biotechnology companies, many of which have significantly more experience than we do, and have significantly more financial resources. Our competitors may have stronger relationships with certain third parties including academic research institutions, with whom we are interested in collaborating and may have, therefore, a competitive advantage in entering into partnering arrangements with those third parties. We may not be able to acquire rights to additional product candidates on terms that we find acceptable, or at all.

We expect that any product candidate to which we acquire rights will require significant additional development and other efforts prior to commercial sale, including extensive clinical testing and approval by the FDA and applicable foreign regulatory authorities. All drug product candidates are subject to the risks of failure inherent in pharmaceutical product development, including the possibility that the product candidate will not be shown to be sufficiently safe or effective for approval by regulatory authorities. Even if our product candidates are approved, they may not be economically manufactured or produced, or be successfully commercialized.

We actively evaluate additional product candidates to acquire for development. Such additional product candidates, if any, could significantly increase our capital requirements and place further strain on the time of our existing personnel, which may delay or otherwise adversely affect the development of our existing product candidates. We must manage our development efforts and clinical trials effectively, and hire, train and integrate additional management, administrative, and sales and marketing personnel. We may not be able to accomplish these tasks, and our failure to accomplish any of them could prevent us from successfully growing.

We may not be able to successfully manage our growth.

In the future, if we are able to advance our product candidates to the point of, and thereafter through, clinical trials, we will need to expand our development, regulatory, manufacturing, marketing and sales capabilities or contract with third parties to provide for these capabilities. Any future growth will place a significant strain on our management and on our administrative, operational, and financial resources. Therefore, our future financial performance and our ability to commercialize our product candidates and to compete effectively will depend, in part, on our ability to manage any future growth effectively. To manage this growth, we must expand our facilities, augment our operational, financial and management systems, and hire and train additional qualified personnel. If we are unable to manage our growth effectively, our business may be harmed.

Our business will subject us to the risk of liability claims associated with the use of hazardous materials and chemicals.

Our contract research and development activities may involve the controlled use of hazardous materials and chemicals. Although we believe that our safety procedures for using, storing, handling and disposing of these materials comply with federal, state and local laws and regulations, we cannot completely eliminate the risk of accidental injury or contamination from these materials. In the event of such an accident, we could be held liable

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for any resulting damages and any liability could have a materially adverse effect on our business, financial condition, and results of operations. In addition, the federal, state and local laws and regulations governing the use, manufacture, storage, handling and disposal of hazardous or radioactive materials and waste products may require our contractors to incur substantial compliance costs that could materially adversely affect our business, financial condition, and results of operations.

We rely on key executive officers and scientific and medical advisors, and their knowledge of our business and technical expertise would be difficult to replace.

We are highly dependent on Dr. Jonathan Lewis, our Chief Executive Officer, Caesar J. Belbel, our Executive Vice President and Chief Legal Officer and our principal scientific, regulatory, and medical advisors. Dr. Lewis and Mr. Belbel s employment are governed by written employment agreements. The employment agreement with Dr. Lewis, as amended, provides for a term that expires in January 2015. Dr. Lewis and Mr. Belbel may terminate their employment with us at any time, subject, however, to certain non-compete and non-solicitation covenants. The loss of the technical knowledge and management and industry expertise of Dr. Lewis and Mr. Belbel, or any of our other key personnel, could result in delays in product development, loss of customers and sales, and diversion of management resources, which could adversely affect our operating results. We do not carry key person life insurance policies on any of our officers or key employees.

If we are unable to hire additional qualified personnel, our ability to grow our business may be harmed.

We will need to hire additional qualified personnel with expertise in preclinical and clinical research and testing, government regulation, formulation and manufacturing, and eventually, sales and marketing. We compete for qualified individuals with numerous biopharmaceutical companies, universities, and other research institutions. Competition for such individuals is intense and we cannot be certain that our search for such personnel will be successful. Attracting and retaining qualified personnel will be critical to our success. If we are unable to hire additional qualified personnel, our ability to grow our business may be harmed.

We may incur substantial liabilities and may be required to limit commercialization of our products in response to product liability lawsuits.

The testing and marketing of medical products entail an inherent risk of product liability. If we cannot successfully defend ourselves against product liability claims, we may incur substantial liabilities or be required to limit commercialization of our products, if approved. Even a successful defense would require significant financial and management resources. Regardless of the merit or eventual outcome, liability claims may result in:

Decreased demand for our product candidates;

Injury to our reputation;

Withdrawal of clinical trial participants;

Withdrawal of prior governmental approvals;

Costs of related litigation;

Substantial monetary awards to patients;

Product recalls;

Loss of revenue; and

The inability to commercialize our product candidates.

We currently carry clinical trial insurance and product liability insurance. However, an inability to renew our policies or to obtain sufficient insurance at an acceptable cost could prevent or inhibit the commercialization of pharmaceutical products that we develop, alone or with collaborators.

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Our business and operations would suffer in the event of system failures.

Despite the implementation of security measures, our internal computer systems and those of our current and future contractors and consultants are vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. While we are not aware of any such material system failure, accident or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our development programs and our business operations. For example, the loss of clinical trial data from completed or future clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. Likewise, we rely on third parties to manufacture our drug candidates and conduct clinical trials, and similar events relating to their computer systems could also have a material adverse effect on our business. To the extent that any disruption or security breach were to result in a loss of, or damage to, our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability and the further development and commercialization of our drug candidates could be delayed.

RISKS RELATED TO THE CLINICAL TESTING, REGULATORY APPROVAL AND MANUFACTURING OF OUR PRODUCT CANDIDATES

If we are unable to obtain the necessary U.S. or worldwide regulatory approvals to commercialize any product candidate, our business will suffer.

We may not be able to obtain the approvals necessary to commercialize our product candidates, or any product candidate that we may acquire or develop in the future for commercial sale. We will need FDA approval to commercialize our product candidates in the United States and approvals from regulatory authorities in foreign jurisdictions equivalent to the FDA to commercialize our product candidates in those jurisdictions. In order to obtain FDA approval of any product candidate, we must submit to the FDA a New Drug Application, or NDA, or Biologics License Application, or BLA, demonstrating that the product candidate is safe for humans and effective for its intended use. This demonstration requires significant research and animal tests, which are referred to as preclinical studies, as well as human tests, which are referred to as clinical trials. Satisfaction of the FDA s regulatory requirements typically takes many years, depending upon the type, complexity, and novelty of the product candidate, and will require substantial resources for research, development, and testing. We cannot predict whether our research, development, and clinical approaches will result in drugs that the FDA will consider safe for humans and effective for their intended uses. The FDA has substantial discretion in the drug approval process and may require us to conduct additional preclinical and clinical testing or to perform post-marketing studies. The approval process may also be delayed by changes in government regulation, future legislation, or administrative action or changes in FDA policy that occur prior to or during our regulatory review. Delays in obtaining regulatory approvals may:

Delay commercialization of, and our ability to derive product revenues from, our product candidates;

Impose costly procedures on us; and

Diminish any competitive advantages that we may otherwise enjoy.

Even if we comply with all FDA requests, the FDA may ultimately reject one or more of our NDAs or BLAs. We cannot be sure that we will ever obtain regulatory approval for any of our product candidates. Failure to obtain FDA approval for our product candidates will severely undermine our business by leaving us without a saleable product,

and therefore without any potential revenue source, until another product candidate can be developed. There is no guarantee that we will ever be able to develop or acquire another product candidate or that we will obtain FDA approval if we are able to do so.

In foreign jurisdictions, we similarly must receive approval from applicable regulatory authorities before we can commercialize any drugs. Foreign regulatory approval processes generally include all of the risks associated with the FDA approval procedures described above.

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Our product candidates are in various stages of clinical trials, which are very expensive and time-consuming. We cannot be certain when we will be able to submit an NDA or BLA to the FDA and any failure or delay in completing clinical trials for our product candidates could harm our business.

Our product candidates are in various stages of development and require extensive clinical testing. Notwithstanding our current clinical trial plans for each of our existing product candidates, we may not be able to commence additional trials or see results from these trials within our anticipated timelines. As such, we cannot predict with any certainty if or when we might submit an NDA or BLA for regulatory approval of our product candidates or whether such an NDA or BLA will be accepted. Because we do not anticipate generating revenues unless and until we submit one or more NDAs or BLAs and thereafter obtain requisite FDA approvals, the timing of our NDA or BLA submissions and FDA determinations regarding approval thereof, will directly affect if and when we are able to generate revenues.

The results of our clinical trials may not support our product candidate claims.

Even if our clinical trials are completed as planned, we cannot be certain that their results will support approval of our product candidates. The FDA normally expects two randomized, well-controlled Phase 3 pivotal studies in support of approval of an NDA or BLA. Success in preclinical testing and early clinical trials does not ensure that later clinical trials will be successful, and we cannot be certain that the results of later clinical trials will replicate the results of prior clinical trials and preclinical testing. For example, despite positive findings in earlier clinical trials, our product candidate palifosfamide failed to meet the primary endpoints of the Phase 3 PICASSO 3 trial, causing us to suspend clinical development of palifosfamide in soft tissue sarcoma. The clinical trial process may fail to demonstrate that our product candidates are safe for humans and effective for the indicated uses. This failure would cause us to abandon a product candidate and may delay development of other product candidates. Any delay in, or termination of, our clinical trials will delay the submission of our NDAs or BLAs with the FDA and, ultimately, our ability to commercialize our product candidates and generate product revenues. In addition, our clinical trials involve small patient populations. Because of the small sample size, the results of these clinical trials may not be indicative of future results.

Our synthetic biology product candidates are based on a novel technology, which makes it difficult to predict the time and cost of product candidate development and subsequently obtaining regulatory approval. Currently, no gene therapy products have been approved in the United States and only one product has been approved in Europe.

We have recently focused our product research and development efforts on our synthetic biology product candidates under our Channel Agreement with Intrexon. These products, including Ad-RTS-IL-12 + veledimex and DC-RTS-IL-12 + veledimex, are based on gene therapy technology. Due to the novelty of this medical technology, there can be no assurance that any development problems we experience in the future related to our synthetic biology platform will not cause significant delays or unanticipated costs, or that such development problems can be solved. We may also experience unanticipated problems or delays in expanding our manufacturing capacity or transferring our manufacturing process to commercial partners, which may prevent us from completing our clinical studies or commercializing our synthetic biology product candidates on a timely or profitable basis, if at all.

In addition, the clinical study requirements of the FDA, the EMA and other regulatory agencies and the criteria these regulators use to determine the safety and efficacy of a product candidate vary substantially according to the type, complexity, novelty and intended use and market of the potential products. The regulatory approval process for novel product candidates such as ours can be more expensive and take longer than for other, better known or extensively studied pharmaceutical or other product candidates. Currently, only one gene therapy product, UniQure s Glybera, which received marketing authorization from the EMA in 2012, has been approved in Europe but has not yet been launched for commercial sale, which makes it difficult to determine how long it will take or how much it will cost to

obtain regulatory approvals for our product candidates in either the United States or Europe. Approvals by the EMA may not be indicative of what the FDA may require for approval.

Regulatory requirements governing gene and cell therapy products have changed frequently and may continue to change in the future. For example, the FDA has established the Office of Cellular, Tissue and Gene Therapies

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within its Center for Biologics Evaluation and Research, or CBER, to consolidate the review of gene therapy and related products, and the Cellular, Tissue and Gene Therapies Advisory Committee to advise CBER on its review. Gene therapy clinical studies conducted at institutions that receive funding for recombinant DNA research from the U.S. National Institutes of Health, or the NIH, are also subject to review by the NIH Office of Biotechnology Activities Recombinant DNA Advisory Committee, or the RAC. Although the FDA decides whether individual gene therapy protocols may proceed, the RAC review process can impede the initiation of a clinical trial, even if the FDA has reviewed the trial and approved its initiation. Conversely, the FDA can put an IND on clinical hold even if the RAC has provided a favorable review. Also, before a clinical trial can begin at an NIH-funded institution, that institution s institutional review board, or IRB, and its Institutional Biosafety Committee will have to review the proposed clinical trial to assess the safety of the trial. In addition, adverse developments in clinical trials of gene therapy products conducted by others may cause the FDA or other regulatory bodies to change the requirements for approval of any of our product candidates.

These regulatory review committees and advisory groups and the new guidelines they promulgate may lengthen the regulatory review process, require us to perform additional studies, increase our development costs, lead to changes in regulatory positions and interpretations, delay or prevent approval and commercialization of these treatment candidates or lead to significant post-approval limitations or restrictions. As we advance our synthetic biology product candidates, we will be required to consult with these regulatory and advisory groups, and comply with applicable guidelines. If we fail to do so, we may be required to delay or discontinue development of our product candidates. These additional processes may result in a review and approval process that is longer than we otherwise would have expected for oncology product candidates. Delay or failure to obtain, or unexpected costs in obtaining, the regulatory approval necessary to bring a potential product to market could decrease our ability to generate sufficient product revenue to maintain our business.

Because we are dependent upon clinical research institutions and other contractors for clinical testing and for research and development activities, the results of our clinical trials and such research activities are, to a certain extent, beyond our control.

We materially rely upon independent investigators and collaborators, such as universities and medical institutions, to conduct our preclinical and clinical trials under agreements with us. These collaborators are not our employees and we cannot control the amount or timing of resources that they devote to our programs. These investigators may not assign as great a priority to our programs or pursue them as diligently as we would if we were undertaking such programs ourselves. If outside collaborators fail to devote sufficient time and resources to our drug development programs, or if their performance is substandard, the approval of our FDA applications, if any, and our introduction of new products, if any, will be delayed. These collaborators may also have relationships with other commercial entities, some of whom may compete with us. If our collaborators assist our competitors to our detriment, our competitive position would be harmed.

Our reliance on third parties to formulate and manufacture our product candidates exposes us to a number of risks that may delay the development, regulatory approval and commercialization of our products or result in higher product costs.

We do not have experience in drug formulation or manufacturing of drugs or biologics and do not intend to establish our own manufacturing facilities. Although we will work closely with and rely upon Intrexon on the manufacturing and scale-up of Intrexon product candidates, we lack the resources and expertise to formulate or manufacture our own product candidates. We currently are contracting for the manufacture of our product candidates. We intend to contract with one or more manufacturers to manufacture, supply, store, and distribute drug supplies for our clinical trials. If a product candidate we develop or acquire in the future receives FDA approval, we will rely on one or more third-party

contractors or Intrexon to manufacture our products. Our anticipated future reliance on a limited number of third-party manufacturers exposes us to the following risks:

We may be unable to identify manufacturers on acceptable terms or at all because the number of potential manufacturers is limited and the FDA must approve any replacement contractor. This approval would

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require new testing and compliance inspections. In addition, a new manufacturer would have to be educated in, or develop substantially equivalent processes for, production of our products after receipt of FDA approval, if any.

Our third-party manufacturers might be unable to formulate and manufacture our products in the volume and of the quality required to meet our clinical needs and commercial needs, if any.

Our future contract manufacturers may not perform as agreed or may not remain in the contract manufacturing business for the time required to supply our clinical trials or to successfully produce, store, and distribute our products.

Drug manufacturers are subject to ongoing periodic unannounced inspection by the FDA, the Drug Enforcement Administration and corresponding state agencies to ensure strict compliance with good manufacturing practices, or cGMP, and other government regulations and corresponding foreign standards. We do not have control over third-party manufacturers compliance with these regulations and standards.

If any third-party manufacturer makes improvements in the manufacturing process for our products, we may not own, or may have to share, the intellectual property rights to the innovation.

Our third-party manufacturers may not be able to comply with cGMP regulations or similar regulatory requirements outside the United States. Our failure, or the failure of our third-party manufacturers, to comply with applicable regulations could result in sanctions being imposed on us, including clinical holds, fines, injunctions, civil penalties, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of drug candidates or products, operating restrictions and criminal prosecutions, any of which could significantly and adversely affect supplies of our products.

Each of these risks could delay our clinical trials, the approval, if any, of our product candidates by the FDA or the commercialization of our product candidates or result in higher costs or deprive us of potential product revenues.

Any drug candidate for which we obtain marketing approval could be subject to post-marketing restrictions or withdrawal from the market and we may be subject to penalties if we fail to comply with regulatory requirements or if we experience unanticipated problems with our products, when and if any of them are approved.

Any drug candidate for which we obtain marketing approval, along with the manufacturing processes, post-approval clinical data, labeling, advertising and promotional activities for such product, will be subject to continual requirements of and review by the FDA and other regulatory authorities. These requirements include submissions of safety and other post-marketing information and reports, registration and listing requirements, cGMP requirements relating to manufacturing, quality control, quality assurance and corresponding maintenance of records and documents, requirements regarding the distribution of samples to physicians and recordkeeping. Even if marketing approval of a drug candidate is granted, the approval may be subject to limitations on the indicated uses for which the product may be marketed or to the conditions of approval, including the requirement to implement a risk evaluation and mitigation strategy, or REMS, which could include requirements for a restricted distribution system. If any of our drug candidates receives marketing approval, the accompanying label may limit the approved use of our drug, which could limit sales of the product.

The FDA may also impose requirements for costly post-marketing studies or clinical trials and surveillance to monitor the safety or efficacy of our approved products. The FDA closely regulates the post-approval marketing and promotion of drugs to ensure drugs are marketed only for the approved indications and in accordance with the provisions of the approved labeling. The FDA imposes stringent restrictions on manufacturers communications regarding off-label use and if we market our products outside of their approved indications, we may be subject to enforcement action for off-label marketing. Violations of the FDCA relating to the promotion of prescription drugs may lead to investigations alleging violations of federal and state health care fraud and abuse laws, as well as state consumer protection laws.

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In addition, later discovery of previously unknown adverse events or other problems with our products, manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may yield various results, including:

Litigation involving patients taking our drug;

Restrictions on such products, manufacturers or manufacturing processes;

Restrictions on the labeling or marketing of a product;

Restrictions on product distribution or use;

Requirements to conduct post-marketing studies or clinical trials;

Warning letters;

Withdrawal of the products from the market;

Refusal to approve pending applications or supplements to approved applications that we submit;

Recall of products;

Fines, restitution or disgorgement of profits or revenues;

Suspension or withdrawal of marketing approvals;

Damage to relationships with existing and potential collaborators;

Unfavorable press coverage and damage to our reputation;

Refusal to permit the import or export of our products;

Product seizure; or

Injunctions or the imposition of civil or criminal penalties.

Noncompliance with similar European Union requirements regarding safety monitoring or pharmacovigilance can also result in significant financial penalties. Similarly, failure to comply with U.S. and foreign regulatory requirements regarding the development of products for pediatric populations and the protection of personal health information can also lead to significant penalties and sanctions.

RISKS RELATED TO OUR ABILITY TO COMMERCIALIZE OUR PRODUCT CANDIDATES

If we are unable either to create sales, marketing and distribution capabilities or enter into agreements with third parties to perform these functions, we will be unable to commercialize our product candidates successfully.

We currently have no marketing, sales, or distribution capabilities. If and when we become reasonably certain that we will be able to commercialize our current or future product candidates, we anticipate allocating resources to the marketing, sales and distribution of our proposed products in North America and in certain other countries; however, we cannot assure that we will be able to market, sell, and distribute our products successfully. Our future success also may depend, in part, on our ability to enter into and maintain collaborative relationships for such capabilities and to encourage the collaborator s strategic interest in the products under development, and such collaborator s ability to successfully market and sell any such products. Although we intend to pursue certain collaborative arrangements regarding the sale and marketing of certain of our product candidates, there are no assurances that we will be able to establish or maintain collaborative arrangements or, if we are able to do so, whether we would be able to conduct our own sales efforts. There can also be no assurance that we will be able to establish or maintain relationships with third-party collaborators or develop in-house sales and distribution capabilities. To the extent that we depend on third parties for marketing and distribution, any revenues we receive will depend upon the efforts of such third parties, and there can be no assurance that such efforts will be successful. In addition, there can also be no assurance that we will be able to market and sell our product candidates in the United States or overseas.

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If we are not able to partner with a third party and are not successful in recruiting sales and marketing personnel or in building a sales and marketing infrastructure, we will have difficulty commercializing our product candidates, which would harm our business. If we rely on pharmaceutical or biotechnology companies with established distribution systems to market our products, we will need to establish and maintain partnership arrangements, and we may not be able to enter into these arrangements on acceptable terms or at all. To the extent that we enter into co-promotion or other arrangements, any revenues we receive will depend upon the efforts of third parties that may not be successful and that will be only partially in our control.

If we cannot compete successfully for market share against other drug companies, we may not achieve sufficient product revenues and our business will suffer.

The market for our product candidates is characterized by intense competition and rapid technological advances. If a product candidate receives FDA approval, it will compete with a number of existing and future drugs and therapies developed, manufactured and marketed by others. Existing or future competing products may provide greater therapeutic convenience or clinical or other benefits for a specific indication than our products, or may offer comparable performance at a lower cost. If our products fail to capture and maintain market share, we may not achieve sufficient product revenues and our business will suffer.

We will compete against fully integrated pharmaceutical companies and smaller companies that are collaborating with larger pharmaceutical companies, academic institutions, government agencies and other public and private research organizations. Many of these competitors have products already approved or in development. In addition, many of these competitors, either alone or together with their collaborative partners, operate larger research and development programs or have substantially greater financial resources than we do, as well as significantly greater experience in:

Developing drugs and biopharmaceuticals;

Undertaking preclinical testing and human clinical trials;

Obtaining FDA and other regulatory approvals of drugs and biopharmaceuticals;

Formulating and manufacturing drugs and biopharmaceuticals; and

Launching, marketing, and selling drugs and biopharmaceuticals.

Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize products that are more effective, have fewer or less severe side effects, are more convenient or are less expensive than any products that we may develop. Our competitors also may obtain FDA or other regulatory approval for their products more rapidly than we may obtain approval for ours, which could result in our competitors establishing a strong market position before we are able to enter the market. In addition, our ability to compete may be affected in many cases by insurers or other third-party payors seeking to encourage the use of generic products.

If physicians and patients do not accept and use our product candidates, our ability to generate revenue from sales of our products will be materially impaired.

Even if the FDA approves our product candidates, physicians and patients may not accept and use them. Acceptance and use of our products will depend upon a number of factors including:

- Perceptions by members of the healthcare community, including physicians, about the safety and effectiveness of our drugs;
- Pharmacological benefit and cost-effectiveness of our products relative to competing products;
- Availability of coverage and adequate reimbursement for our products from government or other healthcare payors;
- Effectiveness of marketing and distribution efforts by us and our licensees and distributors, if any; and
- The price at which we sell our products.

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Because we expect sales of our current product candidates, if approved, to generate substantially all of our product revenues for the foreseeable future, the failure of a drug to find market acceptance would harm our business and could require us to seek additional financing in order to fund the development of future product candidates.

Our ability to generate product revenues will be diminished if our drugs do not obtain coverage adequate reimbursement from payors.

Our ability to commercialize our drugs, alone or with collaborators, will depend in part on the extent to which coverage and reimbursement will be available from government and health administration authorities, private health maintenance organizations and health insurers and other third-party payors.

Patients who are prescribed medicine for the treatment of their conditions generally rely on third-party payors to reimburse all or part of the costs associated with their prescription drugs. Adequate coverage and reimbursement from governmental healthcare programs, such as Medicare and Medicaid, and commercial payors is critical to new product acceptance. Coverage decisions may depend upon clinical and economic standards that disfavor new drug products when more established or lower cost therapeutic alternatives are already available or subsequently become available. Even if we obtain coverage for our product candidates, the resulting reimbursement payment rates might not be adequate or may require co-payments that patients find unacceptably high. Patients are unlikely to use our product candidates unless coverage is provided and reimbursement is adequate to cover a significant portion of the cost of our product candidates.

In addition, the market for our product candidates for which we may receive regulatory approval will depend significantly on access to third-party payors drug formularies, or lists of medications for which third-party payors provide coverage and reimbursement. The industry competition to be included in such formularies often leads to downward pricing pressures on pharmaceutical companies. Also, third-party payors may refuse to include a particular branded drug in their formularies or otherwise restrict patient access to a branded drug when a less costly generic equivalent or other alternative is available.

Third-party payors, whether foreign or domestic, or governmental or commercial, are developing increasingly sophisticated methods of controlling healthcare costs. In addition, in the United States, no uniform policy of coverage and reimbursement for drug products exists among third-party payors. Therefore, coverage and reimbursement for drug products can differ significantly from payor to payor. As a result, the coverage determination process is often a time-consuming and costly process that requires us to provide scientific and clinical support for the use of our products to each payor separately, with no assurance that approval will be obtained. If we are unable to obtain coverage of and adequate payment levels for our product candidates from third-party payors, physicians may limit how much or under what circumstances they will prescribe or administer them and patients may decline to purchase them. This in turn could affect our ability to successfully commercialize our products and impact our profitability, results of operations, financial condition, and future success.

In addition, in many foreign countries, particularly the countries of the European Union, the pricing of prescription drugs is subject to government control. In some non-U.S. jurisdictions, the proposed pricing for a drug must be approved before it may be lawfully marketed. The requirements governing drug pricing vary widely from country to country. For example, the EU provides options for its member states to restrict the range of medicinal products for which their national health insurance systems provide reimbursement and to control the prices of medicinal products for human use. A member state may approve a specific price for the medicinal product or it may instead adopt a system of direct or indirect controls on the profitability of the company placing the medicinal product on the market. We may face competition for our product candidates from lower-priced products in foreign countries that have placed price controls on pharmaceutical products. In addition, there may be importation of foreign products that compete

with our own products, which could negatively impact our profitability.

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Healthcare legislative reform measures may have a material adverse effect on our business and results of operations.

In both the United States and certain foreign jurisdictions, there have been a number of legislative and regulatory proposals in recent years to change the healthcare system in ways that could impact our future ability to sell our product candidates profitably. For example, the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 established a new Part D prescription drug benefit, which became effective January 1, 2006. Under the prescription drug benefit, Medicare beneficiaries can obtain prescription drug coverage from private sector plans that are permitted to limit the number of prescription drugs that are covered in each therapeutic category and class on their formularies. If any of our product candidates that are approved by the FDA are not widely included on the formularies of these plans, our ability to market our products to the Medicare population could suffer.

Furthermore, there have been and continue to be a number of initiatives at the federal and state level that seek to reduce healthcare costs. Most recently, in March 2010, President Obama signed into law the Patient Protection and Affordable Health Care Act, as amended by the Health Care and Education Reconciliation Act, or collectively the PPACA, which includes measures that significantly change the way healthcare is financed by both governmental and private insurers. Among the provisions of the PPACA of importance to the pharmaceutical industry are the following:

An annual, nondeductible fee on any entity that manufactures or imports certain branded prescription drugs and biologic agents, apportioned among these entities according to their market share in certain government healthcare programs, beginning in 2011;

An increase in the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program, retroactive to January 1, 2010, to 23% and 13% of the average manufacturer price for most branded and generic drugs, respectively;

A new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer s outpatient drugs to be covered under Medicare Part D, beginning in 2011;

Extension of manufacturers Medicaid rebate liability to covered drugs dispensed to individuals who are enrolled in Medicaid managed care organizations, effective March 23, 2010;

Expansion of eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to additional individuals beginning in April 2010 and by adding new mandatory eligibility categories for certain individuals with income at or below 133% of the Federal Poverty Level beginning in 2014, thereby potentially increasing both the volume of sales and manufacturers Medicaid rebate liability; a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer s outpatient drugs to be covered under Medicare Part D, beginning in 2011;

Expansion of the entities eligible for discounts under the Public Health Service pharmaceutical pricing program, effective in January 2010;

A new requirement to annually report drug samples that manufacturers and distributors provide to physicians, effective April 1, 2012;

Expansion of healthcare fraud and abuse laws, including the False Claims Act and the Anti-Kickback Statute, new government investigative powers, and enhanced penalties for noncompliance;

A licensure framework for follow-on biologic products;

A new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research;

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Creation of the Independent Payment Advisory Board which, beginning in 2014, will have authority to recommend certain changes to the Medicare program that could result in reduced payments for prescription drugs and those recommendations could have the effect of law even if Congress does not act on the recommendations; and

Establishment of a Center for Medicare Innovation at CMS to test innovative payment and service delivery models to lower Medicare and Medicaid spending, potentially including prescription drug spending beginning by January 1, 2011.

In addition, other legislative changes have been proposed and adopted since the PPACA was enacted. In August 2011, President Obama signed into law the Budget Control Act of 2011, which, among other things, created the Joint Select Committee on Deficit Reduction to recommend proposals in spending reductions to Congress. The Joint Select Committee on Deficit Reduction did not achieve its targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, triggering the legislation s automatic reductions to several government programs. These reductions include aggregate reductions to Medicare payments to providers of up to 2% per fiscal year, which went into effect on April 1, 2013. In January 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, which, among other things, further reduced Medicare payments to several providers and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. The full impact of these new laws, as well as laws and other reform and cost containment measures that may be proposed and adopted in the future, remains uncertain, but may result in additional reductions in Medicare and other healthcare funding, which could have a material adverse effect on our future customers and accordingly, our ability to generate revenue, attain profitability, or commercialize our products.

If we fail to comply with federal and state healthcare laws, including fraud and abuse and health information privacy and security laws, we could face substantial penalties and our business, results of operations, financial condition and prospects could be adversely affected.

As a pharmaceutical company, even though we do not and will not control referrals of healthcare services or bill directly to Medicare, Medicaid or other third-party payors, certain federal and state healthcare laws and regulations pertaining to fraud and abuse and patients rights are and will be applicable to our business. We could be subject to healthcare fraud and abuse and patient privacy regulation by both the federal government and the states in which we conduct our business. The laws that may affect our ability to operate include:

The federal Anti-Kickback Statute, which constrains our marketing practices, educational programs, pricing policies, and relationships with healthcare providers or other entities, by prohibiting, among other things, soliciting, receiving, offering or paying remuneration, directly or indirectly, to induce, or in return for, either the referral of an individual or the purchase or recommendation of an item or service reimbursable under a federal healthcare program, such as the Medicare and Medicaid programs;

Federal civil and criminal false claims laws and civil monetary penalty laws, which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment from Medicare, Medicaid, or other third-party payors that are false or fraudulent;

The federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which created new federal criminal statutes that prohibit executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters;

HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, or HITECH, and its implementing regulations, which imposes certain requirements relating to the privacy, security and transmission of individually identifiable health information; and

New requirements to report certain financial arrangements with physicians and teaching hospitals, as defined in the PPACA and its implementing regulations, including reporting any transfer of value made or distributed to teaching hospitals, prescribers, and other healthcare providers and reporting any

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ownership and investment interests held by physicians and their immediate family members and applicable group purchasing organizations during the preceding calendar year, with data collection required as of August 1, 2013 and reporting to the Centers for Medicare & Medicaid Services, or CMS, to be required by March 31, 2014 and by the 90th day of each subsequent calendar year;

State and foreign law equivalents of each of the above federal laws, such as anti-kickback and false claims laws which may apply to items or services reimbursed by any third-party payor, including commercial insurers, and state and foreign laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Because of the breadth of these laws and the narrowness of the statutory exceptions and safe harbors available, it is possible that some of our business activities could be subject to challenge under one or more of such laws. In addition, recent health care reform legislation has further strengthened these laws. For example, the PPACA, among other things, amends the intent requirement of the federal anti-kickback and criminal healthcare fraud statutes. A person or entity no longer needs to have actual knowledge of this statute or specific intent to violate it. Moreover, the PPACA provides that the government may assert that a claim including items or services resulting from a violation of the federal anti-kickback statute constitutes a false or fraudulent claim for purposes of the False Claims Act.

To the extent that any of our product candidates is ultimately sold in a foreign country, we may be subject to similar foreign laws and regulations. If we or our operations are found to be in violation of any of the laws described above or any other governmental regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines, exclusion from participation in United States federal or state health care programs, and the curtailment or restructuring of our operations. Any penalties, damages, fines, curtailment or restructuring of our operations could materially adversely affect our ability to operate our business and our financial results. Although compliance programs can mitigate the risk of investigation and prosecution for violations of these laws, the risks cannot be entirely eliminated. Any action against us for violation of these laws, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management s attention from the operation of our business. Moreover, achieving and sustaining compliance with applicable federal and state privacy, security and fraud laws may prove costly.

Our ability to use net operating loss carryforwards to reduce future tax payments may be limited or restricted.

We have generated significant net operating loss carryforwards, or NOLs, as a result of our incurrence of losses since inception. We generally are able to carry NOLs forward to reduce taxable income in future years. However, our ability to utilize the NOLs is subject to the rules of Section 382 of the Internal Revenue Code. Section 382 generally restricts the use of NOLs after an ownership change. An ownership change occurs if, among other things, the stockholders (or specified groups of stockholders) who own or have owned, directly or indirectly, 5% or more of a corporation s common stock or are otherwise treated as 5% stockholders under Section 382 and the United States Treasury Department regulations promulgated thereunder increase their aggregate percentage ownership of that corporation s stock by more than 50 percentage points over the lowest percentage of the stock owned by these stockholders over the applicable testing period. In the event of an ownership change, Section 382 imposes an annual limitation on the amount of taxable income a corporation may offset with NOL carry forwards. This annual limitation is generally equal to the product of the value of the corporation s stock on the date of the ownership change, multiplied by the long-term tax-exempt rate published monthly by the Internal Revenue Service. Any unused annual limitation may be carried over to later years until the applicable expiration date for the respective NOL carry forwards. We may have experienced an ownership change within the meaning of Section 382 in the past and there can be no assurance that we have not experienced additional ownership changes. As a result, our NOLs may be subject to limitations and we may

be required to pay taxes earlier and in larger amounts than would be the case if our NOLs were freely usable.

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Our synthetic biology product candidates may face competition in the future from follow-on biologics.

With the enactment of the Biologics Price Competition and Innovation Act of 2009, or BPCIA, as part of the Patient Protection and Affordable Care Act, an abbreviated pathway for the approval of follow-on biological products was created. The new abbreviated regulatory pathway establishes legal authority for the FDA to review and approve biosimilar biologics, including the possible designation of a biosimilar as interchangeable with an existing brand product. Under the BPCIA, an application for a biosimilar product cannot be approved by the FDA until 12 years after the original branded product was approved under a BLA. The new law is complex and is only beginning to be interpreted and implemented by the FDA. As a result, its ultimate impact is subject to uncertainty, and could have a material adverse effect on the future commercial prospects for our biological products.

RISKS RELATED TO OUR INTELLECTUAL PROPERTY

If we or our licensors fail to adequately protect or enforce our intellectual property rights or secure rights to patents of others, the value of our intellectual property rights would diminish and our ability to successfully commercialize our products may be impaired.

Our success, competitive position, and future revenues will depend in part on our ability and the abilities of our licensors to obtain and maintain patent protection for our products, methods, processes and other technologies, to preserve our trade secrets, to prevent third parties from infringing on our proprietary rights, and to operate without infringing the proprietary rights of third parties.

To date, we have exclusive rights to certain United States and foreign intellectual property with respect to our small molecule product candidates and with respect to the Intrexon technology, including the existing Intrexon product candidates. Under our Channel Agreement with Intrexon, Intrexon has the sole right to conduct and control the filings, prosecution and maintenance of the patents and patent applications licensed to us. Although under the agreement Intrexon has agreed to consider in good faith and consult with us regarding any comments we may have regarding these patents and patent applications, we cannot guarantee that our comments will be solicited or followed. Without direct control of the channel program patents and patent applications, we are dependent on Intrexon to keep us advised of prosecution, particularly in foreign jurisdictions where prosecution information may not be publicly available. We anticipate that we and Intrexon will file additional patent applications both in the United States and in other countries. However, we cannot predict or guarantee:

- The degree and range of protection any patents will afford us against competitors, including whether third parties will find ways to invalidate or otherwise circumvent our patents;
- If and when patents will be issued;
- Whether or not others will obtain patents claiming subject matter related to or relevant to our product candidates; or
- Whether we will need to initiate litigation or administrative proceedings that may be costly whether we win or lose.

The patent prosecution process is expensive and time-consuming, and we may not be able to file and prosecute all necessary or desirable patent applications at a reasonable cost, in a timely manner, or in all jurisdictions. It is also possible that we will fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection. Moreover, in some circumstances, we do not have the right to control the preparation, filing and prosecution of patent applications, or to maintain the patents, covering technology that we license from third parties. We may also require the cooperation of our licensors in order to enforce the licensed patent rights, and such cooperation may not be provided. Therefore, these patents and applications may not be prosecuted and enforced in a manner consistent with the best interests of our business.

The patent position of biotechnology and pharmaceutical companies generally is highly uncertain, involves complex legal and factual questions and has in recent years been the subject of much litigation. In addition, the laws of foreign countries may not protect our rights to the same extent as the laws of the United States and we

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may fail to seek or obtain patent protection in all major markets. For example, European patent law restricts the patentability of methods of treatment of the human body more than United States law does. Publications of discoveries in the scientific literature often lag behind the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until 18 months after filing, or in some cases not at all.

Changes in patent laws or in interpretations of patent laws in the United States and other countries may diminish the value of our intellectual property or narrow the scope of our patent protection. In September 2011, the Leahy-Smith America Invents Act, or the Leahy-Smith Act, was signed into law, resulting in a number of significant changes to United States patent law. These changes include provisions that affect the way patent applications will be prosecuted and may also affect patent litigation. In addition, the United States Supreme Court has ruled on several patent cases in recent years, either narrowing the scope of patent protection available in certain circumstances or weakening the rights of patent owners in certain situations. This combination of events has created uncertainty with respect to the value of patents, once obtained, and with regard to our ability to obtain patents in the future. As the United States Patent and Trademark Office continues to implement the Leahy-Smith Act, and as the federal courts have the opportunity to interpret the Leahy-Smith Act, the laws and regulations governing patents, and the rules regarding patent procurement could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce our existing patents and patents that we might obtain in the future.

Certain technologies utilized in our research and development programs are already in the public domain. Moreover, a number of our competitors have developed technologies, filed patent applications or obtained patents on technologies, compositions and methods of use that are related to our business and may cover or conflict with our owned or licensed patent applications, technologies or product candidates. Such conflicts could limit the scope of the patents that we may be able to obtain or may result in the rejection of claims in our patent applications. Because patent applications in the United States and many foreign jurisdictions are typically not published until eighteen 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 others have not filed or maintained patent applications for technology used by us or covered by our pending patent applications without our being aware of these applications. Therefore, we cannot know with certainty whether we were the first to make the inventions claimed in our owned patents or pending patent applications, or that we were the first to file for patent protection of such inventions, nor can we know whether those from whom we license patents were the first to make the inventions claimed or were the first to file. As a result, the issuance, scope, validity, enforceability and commercial value of our patent rights are highly uncertain. Our pending and future patent applications may not result in patents being issued which protect our technology or products, in whole or in part, or which effectively prevent others from commercializing competitive technologies and products. Changes in either the patent laws or interpretation of the patent laws in the United States and other countries may diminish the value of our patents or narrow the scope of our patent protection. In addition, our own earlier filed patents and applications or those of Intrexon may limit the scope of later patents we obtain or may result in the rejection of claims in our later filed patent applications. If third parties filed patent applications or obtained patents on technologies, compositions and methods of use that are related to our business and that cover or conflict with our owned or licensed patent applications, technologies or product candidates, we may be required to challenge such protection, terminate or modify our programs impacted by such protection or obtain licenses from such third parties, which might not be available on acceptable terms, or at all.

Even if our owned and licensed patent applications issue as patents, they may not issue in a form that will provide us with any meaningful protection, prevent competitors from competing with us or otherwise provide us with any competitive advantage. Our competitors may be able to circumvent our owned or licensed patents by developing similar or alternative technologies or products in a non-infringing manner.

The issuance of a patent is not conclusive as to its inventorship, scope, validity or enforceability, and our owned and licensed patents may be challenged in the courts or patent offices in the United States and abroad. Such challenges may result in loss of exclusivity or freedom to operate or in patent claims being narrowed, invalidated

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or held unenforceable, in whole or in part, which could limit our ability to stop others from using or commercializing similar or identical technology and products, or limit the duration of the patent protection of our technology and products. Given the amount of time required for the development, testing and regulatory review of new drug candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. As a result, our owned and licensed patent portfolio may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours.

If we are unable to protect the confidentiality of our trade secrets, our business and competitive position would be harmed.

Our success also depends upon the skills, knowledge, and experience of our scientific and technical personnel, our consultants and advisors, as well as our licensors and contractors. To help protect our proprietary know-how and our inventions for which patents may be unobtainable or difficult to obtain, and to maintain our competitive position, we rely on trade secret protection and confidentiality agreements. To this end, it is our general policy to require our employees, consultants, advisors, and contractors to enter into agreements that prohibit the disclosure of confidential information and, where applicable, require disclosure and assignment to us of the ideas, developments, discoveries, and inventions important to our business. These agreements may not provide adequate protection for our trade secrets, know-how or other proprietary information in the event of any unauthorized use or disclosure or the lawful development by others of such information. Moreover, we may not be able to obtain adequate remedies for any breaches of these agreements. Our trade secrets may also be obtained by third parties by other means, such as breaches of our physical or computer security systems. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive and time-consuming, and the outcome is unpredictable. In addition, some courts inside and outside the United States are less willing or unwilling to protect trade secrets. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent them, or those to whom they communicate it, from using that technology or information to compete with us. If any of our trade secrets, know-how or other proprietary information is disclosed, the value of our trade secrets, know-how and other proprietary rights would be significantly impaired and our business and competitive position would suffer.

Third-party claims of intellectual property infringement would require us to spend significant time and money and could prevent us from developing or commercializing our products.

In order to protect or enforce patent rights, we, or Intrexon, may initiate patent infringement litigation against third parties. Similarly, we may be sued by others for patent infringement. We also may become subject to proceedings conducted in the United States Patent and Trademark Office, including interference proceedings to determine the priority or derivation of inventions, or post-grant review, inter partes review, or reexamination proceedings reviewing the patentability of our patented claims. In addition, any foreign patents that are granted may become subject to opposition, nullity, or revocation proceedings in foreign jurisdictions having such proceedings. The defense and prosecution, if necessary, of intellectual property actions are costly and divert technical and management personnel away from their normal responsibilities.

Our commercial success depends upon our ability, and the ability of our collaborators, to develop, manufacture, market and sell our drug candidates without infringing the proprietary rights of third parties. There is considerable intellectual property litigation in the biotechnology and pharmaceutical industries. While no such litigation has been brought against us and we have not been held by any court to have infringed a third party s intellectual property rights, we cannot guarantee that our products or use of our products do not infringe third-party patents. It is also possible that we have failed to identify relevant third-party patents or applications. For example, applications filed before November 29, 2000 and certain applications filed after that date that will not be filed outside the United States remain confidential until patents issue. Patent applications in the United States and elsewhere are published approximately 18

months after the earliest filing, which is referred to as the priority date. Therefore, patent applications covering our products or technology could have been filed by others without our knowledge. Additionally, pending patent applications which have been published can, subject to certain limitations, be later amended in a manner that could cover our products or the use of our products.

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Our research, development and commercialization activities, as well as any product candidates or products resulting from these activities, may infringe or be claimed to infringe patents or patent applications under which we do not hold licenses or other rights. Patents do not protect its owner from a claim of infringement of another owner s patent. Therefore, our patent position cannot and does not provide any assurance that we are not infringing the patent rights of another.

The patent landscape in the field of synthetic biology, which we are pursuing under our Channel Agreement with Intrexon, is particularly complex. We are aware of numerous United States and foreign patents and pending patent applications of third parties that cover compositions, methods of use and methods of manufacture of synthetic biology, including biotherapeutics involving the *in vivo* expression of human IL-12. In addition, there may be patents and patent applications in the field of which we are not aware. The technology we license from Intrexon is early-stage technology and we are just beginning the process of designing and developing products using this technology. Although we will seek to avoid pursuing the development of products that may infringe any patent claims that we believe to be valid and enforceable, we may fail to do so. Moreover, given the breadth and number of claims in patents and pending patent applications in the field of synthetic biology and the complexities and uncertainties associated with them, third parties may allege that we are infringing upon patent claims even if we do not believe such claims to be valid and enforceable.

If a claim for patent infringement is asserted, there can be no assurance that the resolution of the claim would permit us to continue marketing the relevant product on commercially reasonable terms, if at all. We may not have sufficient resources to bring these actions to a successful conclusion. If we do not successfully defend any infringement actions to which we become a party or are unable to have infringed patents declared invalid or unenforceable, we may have to pay substantial monetary damages, which can be tripled if the infringement is deemed willful, or be required to discontinue or significantly delay commercialization and development of the affected products.

Any legal action against us or our collaborators claiming damages and seeking to enjoin developmental or marketing activities relating to affected products could, in addition to subjecting us to potential liability for damages, require us or our collaborators to obtain licenses to continue to develop, manufacture, or market the affected products. Such a license may not be available to us on commercially reasonable terms, if at all.

An adverse determination in a proceeding involving our owned or licensed intellectual property may allow entry of generic substitutes for our products.

Obtaining and maintaining our patent protection depends on compliance with various procedural, document submission, fee payment and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for noncompliance with these requirements.

Periodic maintenance fees on any issued patent are due to be paid to the United States Patent and Trademark Office and foreign patent agencies in several stages over the lifetime of the patent. The United States Patent and Trademark Office and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. While an inadvertent lapse can in many cases be cured by payment of a late fee or by other means in accordance with the applicable rules, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. Noncompliance events that could result in abandonment or lapse of a patent or patent application include, but are not limited to, failure to respond to official actions within prescribed time limits, non-payment of fees and failure to properly legalize and submit formal documents. In such an event, our competitors might be able to enter the market, which would have a material adverse effect on our business.

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If we breach any of the agreements under which we license rights to products or technology from others, we could lose license rights that are material to our business or be subject to claims by our licensors.

We license rights to products and technology that are important to our business, and we expect to enter into additional licenses in the future. For instance, we have exclusively licensed patents and patent applications under our Channel Agreement with Intrexon. Under these agreements, we are subject to a range of commercialization and development, sublicensing, royalty, patent prosecution and maintenance, insurance and other obligations.

Any failure by us to comply with any of these obligations or any other breach by us of our license agreements could give the licensor the right to terminate the license in whole, terminate the exclusive nature of the license or bring a claim against us for damages. Any such termination or claim could have a material adverse effect on our financial condition, results of operations, liquidity or business. Even if we contest any such termination or claim and are ultimately successful, such dispute could lead to delays in the development or commercialization of potential products and result in time-consuming and expensive litigation or arbitration. On termination we may be required to license to the licensor any related intellectual property that we developed.

In addition, in certain cases, the rights licensed to us are rights of a third party licensed to our licensor. In such instances, if our licensors do not comply with their obligations under such licenses, our rights under our license agreements with our licensor may be adversely affected.

We may be subject to claims by third parties asserting that our employees or we have misappropriated their intellectual property, or claiming ownership of what we regard as our own intellectual property.

Many of our employees were previously employed at universities or other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that these employees or we have used or disclosed intellectual property, including trade secrets or other proprietary information, of any such employee s former employer. Litigation may be necessary to defend against these claims.

In addition, while it is our policy to require our employees and contractors who may be involved in the development of intellectual property to execute agreements assigning such intellectual property to us, we may be unsuccessful in executing such an agreement with each party who in fact develops intellectual property that we regard as our own. Our and their assignment agreements may not be self-executing or may be breached, and we may be forced to bring claims against third parties, or defend claims they may bring against us, to determine the ownership of what we regard as our intellectual property.

If we fail in prosecuting or defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. Even if we are successful in prosecuting or defending against such claims, litigation could result in substantial costs and be a distraction to management.

OTHER RISKS RELATED TO OUR COMPANY

Our stock price has been, and may continue to be, volatile.

The market price of our common stock has been highly volatile. The stock market from time to time experiences significant price and volume fluctuations unrelated to the operating performance of particular companies. In addition, factors such as fluctuations in our operating results, future sales of our common stock, announcements of the timing and amount of product sales, announcements of the status of development of our products, announcements of

technological innovations or new therapeutic products by us or our competitors, announcements regarding collaborative agreements, laboratory or clinical trial results, government regulation, FDA determinations on the approval of a product candidate NDA submission, developments in patent or other proprietary rights, public concern as to the safety of drugs developed by us or others, changes in reimbursement policies, comments made by securities analysts and general market conditions may have a substantial effect on the market price of our common stock.

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We are subject to Sarbanes-Oxley and the reporting requirements of federal securities laws, which can be expensive.

As a public reporting company, we are subject to the Sarbanes-Oxley Act of 2002, as well as to the information and reporting requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act, and other federal securities laws. As a result, we incur significant legal, accounting, and other expenses that we would not incur as a private company, including costs associated with our public company reporting requirements and corporate governance requirements. As an example of public reporting company requirements, we evaluate the effectiveness of disclosure controls and procedures and of our internal control over financing reporting in order to allow management to report on such controls. Sarbanes-Oxley generally requires that a public reporting company s independent registered public accounting firm attest to the effectiveness of the company s internal control over financial reporting as of the end of each fiscal year in the company s Annual Report on Form 10-K. In addition, any updates to our finance and accounting systems, procedures and controls, which may be required as a result of our ongoing analysis of internal controls, or results of testing by our independent auditor, may require significant time and expense. As a company with limited accounting resources, a significant amount of management s time and attention has been and will continue to be diverted from our business to ensure compliance with these regulatory requirements. This diversion of management s time and attention may have a material adverse effect on our business, financial condition and results of operations.

Management is working to continuously monitor and improve internal controls and has set in place controls to mitigate the potential segregation of duties risk. In the event significant deficiencies or material weaknesses are identified in our internal control over financial reporting that we cannot remediate in a timely manner, or if we are unable to receive a positive attestation from our independent registered public accounting firm with respect to our internal controls over financial reporting, investors and others may lose confidence in the reliability of our financial statements and the trading price of our common stock and ability to obtain any necessary equity or debt financing could suffer. In addition, in the event that our independent registered public accounting firm is unable to rely on our internal controls over financial reporting in connection with its audit of our financial statements, and in the further event that it is unable to devise alternative procedures in order to satisfy itself as to the material accuracy of our financial statements and related disclosures, we may be unable to file our periodic reports with the United States Securities and Exchange Commission, or SEC. This would likely have an adverse effect on the trading price of our common stock and our ability to secure any necessary additional equity or debt financing, and could result in the delisting of our common stock from the NASDAQ Capital Market, which would severely limit the liquidity of our common stock.

Anti-takeover provisions in our charter documents and under Delaware law may make an acquisition of us, which may be beneficial to our stockholders, more difficult.

Provisions of our amended and restated certificate of incorporation and bylaws, as well as provisions of Delaware law, could make it more difficult for a third party to acquire us, even if doing so would benefit our stockholders. These provisions authorize the issuance of blank check preferred stock that could be issued by our board of directors to increase the number of outstanding shares and hinder a takeover attempt, and limit who may call a special meeting of stockholders. In addition, Section 203 of the Delaware General Corporation Law generally prohibits a publicly-held Delaware corporation from engaging in a business combination with a party that owns at least 15% of its common stock unless the business combination is approved by the company s board of directors before the person acquires the 15% ownership stake or later by its board of directors and two-thirds of its stockholders. In connection with our January 2011 issuance of shares of common stock to Intrexon in a private placement transaction, our board of directors waived the Section 203 prohibition with respect to a future business combination with Intrexon. Section 203 and this standstill provision could have the effect of delaying, deferring or preventing a change in control that our

stockholders might consider to be in their best interests.

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Because we do not expect to pay dividends, you will not realize any income from an investment in our common stock unless and until you sell your shares at profit.

We have never paid dividends on our capital stock and we do not anticipate that we will pay any dividends for the foreseeable future. Accordingly, any return on an investment in us will be realized, if at all, only when you sell shares of our common stock.

If securities and/or industry analysts fail to continue publishing research about our business, if they change their recommendations adversely or if our results of operations do not meet their expectations, our stock price and trading volume could decline.

The trading market for our common stock will be influenced by the research and reports that industry or securities analysts publish about us or our business. If one or more of these analysts cease coverage of our company or fail to publish reports on us regularly, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline. In addition, it is likely that in some future period our operating results will be below the expectations of securities analysts or investors. If one or more of the analysts who cover us downgrade our stock, or if our results of operations do not meet their expectations, our stock price could decline.

Our stock price is volatile and may decline regardless of our operating performance, and you may not be able to resell your shares at or above the price at which you purchased such shares.

The market price for our common stock is volatile and may fluctuate significantly in response to a number of factors, most of which we cannot control, including:

Price and volume fluctuations in the overall stock market;

Market conditions or trends in our industry or the economy as a whole;

Changes in operating performance and stock market valuations of other biopharmaceutical companies generally, or those that develop and commercialize cancer drugs in particular;

The financial projections we may provide to the public, any changes in these projections or our failure to meet these projections;

Changes in financial estimates or ratings by any securities analysts who follow our common stock, our failure to meet these estimates or failure of those analysts to initiate or maintain coverage of our common stock;

The public s response to press releases or other public announcements by us or third parties, including our filings with the SEC and announcements relating to product development, litigation and intellectual property impacting us or our business;

The sustainability of an active trading market for our common stock;

Future sales of our common stock by our executive officers, directors and significant stockholders;

Announcements of mergers or acquisition transactions;

Our inclusion or deletion from certain stock indices;

Announcements of medical innovations or new products by our competitors;

Announcements of changes in our senior management;

Other events or factors, including those resulting from war, incidents of terrorism, natural disasters or responses to these events; and

Changes in accounting principles.

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In addition, the stock markets, and in particular the NASDAQ Capital Market, have experienced extreme price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many biopharmaceutical companies. Stock prices of many biopharmaceutical companies have fluctuated in a manner unrelated or disproportionate to the operating performance of those companies. In the past, stockholders have instituted securities class action litigation following periods of market volatility. If we were involved in securities litigation, we could incur substantial costs and our resources and the attention of management could be diverted from our business.

Our principal stockholders, executive officers and directors have substantial control over the company, which may prevent you and other stockholders from influencing significant corporate decisions and may harm the market price of our common stock.

As of December 31, 2013, our executive officers, directors and holders of five percent or more of our outstanding common stock, beneficially owned, in the aggregate, 30.0% of our outstanding common stock. These stockholders may have interests that conflict with our other stockholders and, if acting together, have the ability to influence the outcome of matters submitted to our stockholders for approval, including the election and removal of directors and any merger, consolidation or sale of all or substantially all of our assets. Accordingly, this concentration of ownership may harm the market price of our common stock by:

Delaying, deferring or preventing a change in control;

Impeding a merger, consolidation, takeover or other business combination involving us; or

Discouraging a potential acquirer from making a tender offer or otherwise attempting to obtain control of us

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Our corporate office is located at One First Avenue, Parris Building #34, Navy Yard Plaza, Boston, Massachusetts 02129. The Boston office consists of four floors, occupying approximately twenty-six thousand square feet, which are leased pursuant to a lease agreement that expires August 2016 under which we are required to make rental payments at an average monthly rate of approximately $62 thousand through the remainder of the lease term. On August 30, 2013, the Company entered into a sublease agreement to lease approximately five thousand square feet to a subtenant. Under the sublease agreement, the Company will receive sublease payments at an average monthly rate of approximately $10 thousand through the remainder of the lease term. In accordance with the sublease agreement, the subtenant provided the Company with a security deposit of $20 thousand, which is recorded in other non-current assets and other liabilities on the balance sheet for the year ended December 31, 2013.

We also maintain office space in New York, which is subject to a lease agreement that expires in October 2018. Under the terms of the lease, we lease approximately seven thousand square feet and are required to make rental payments at an average monthly rate of approximately $41 thousand through the remainder of the term of the lease. On October 17, 2013, the Company entered into a sublease agreement to lease approximately seven thousand square feet

to a subtenant. Under the sublease agreement, the Company will receive sublease payments at an average monthly rate of approximately $28 thousand through the remainder of the term of the lease. In accordance with the sublease agreement, the subtenant provided the Company with a security deposit of an irrevocable standby letter of credit for approximately $167 thousand.

We also leased office space in Germantown, MD. The Maryland office space was subject to a lease agreement that would have expired in March 2014. On July 16, 2012, the Germantown, Maryland office was closed. Under

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the terms of the lease, we leased approximately two thousand square feet and were required to make rental payments at an average monthly rate of approximately $4 thousand through the remainder of the lease (see Note 8 to the financial statements, Commitments and Contingencies).

Item 3. Legal Proceedings

In the ordinary course of business, we may periodically become subject to legal proceedings and claims arising in connection with ongoing business activities. The results of litigation and claims cannot be predicted with certainty, and unfavorable resolutions are possible and could materially affect our results of operations, cash flows or financial position. In addition, regardless of the outcome, litigation could have an adverse impact on us because of defense costs, diversion of management resources and other factors.

While the outcome of these proceedings and claims cannot be predicted with certainty, there are no matters, as of December 31, 2013, that, in the opinion of management, might have a material adverse effect on our financial position, results of operation or cash flows.

Item 4. Mine Safety Disclosures

Not applicable.

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PART II

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

Market for Common Stock

Our common stock trades on the NASDAQ Capital Market under the symbol ZIOP. The following table sets forth the high and low sale prices for our common stock during each quarter within the two most recently completed fiscal years as reported by the NASDAQ Capital Market.

	2013		2012	
Quarter Ended	**High**	**Low**	**High**	**Low**
March 31	$ 5.18	$ 3.09	$ 5.69	$ 4.15
June 30	$ 3.94	$ 2.11	$ 6.00	$ 4.39
September 30	$ 2.62	$ 1.52	$ 6.22	$ 4.97
December 31	$ 5.71	$ 1.72	$ 5.36	$ 3.99

Record Holders

As of February 10, 2014, we had approximately 154 holders of record of our common stock, one of which was Cede & Co., a nominee for Depository Trust Company, or DTC. Shares of common stock that are held by financial institutions as nominees for beneficial owners are deposited into participant accounts at DTC, and are considered to be held of record by Cede & Co. as one stockholder. As of February 10, 2014, we had approximately 12,407 beneficial holders of our common stock.

Dividends

We have never declared or paid a cash dividend on our common stock and do not anticipate paying any cash dividends in the foreseeable future.

Recent Sales of Unregistered Securities

None.

Issuer Purchases of Equity Securities

During the three months ended December 31, 2013, we purchased 56,683 shares of restricted stock from employees to cover withholding taxes due from the employees at the time that applicable forfeiture restrictions lapsed. The following table provides information about these purchases of restricted shares for the three months ended December 31, 2013:

Period	Total Number of Shares Purchased	Average Price Paid Per Share
October 1 to 31, 2013		$

November 1 to 30, 2013		
December 1 to 31, 2013	56,683	4.37
Total	56,683	

Stockholder Return Comparison

The information included in this section is not deemed to be soliciting material or to be filed with the SEC or subject to Regulation 14A or 14C under the Exchange Act or to the liabilities of Section 18 of the Exchange Act, and will not be deemed to be incorporated by reference into any filing under the Securities Act or the Exchange Act, except to the extent we specifically incorporate it by reference into such a filing.

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The graph below matches the cumulative 5-year total return of holders of our common stock with the cumulative total returns of the NASDAQ Composite index and the NASDAQ Biotechnology index. The graph assumes that the value of the investment in our common stock and in each of the indexes (including reinvestment of dividends) was $100 on December 31, 2008 and tracks it through December 31, 2013.

Item 6. Selected Financial Data

The selected financial data presented below has been derived from our financial statements. This data may not be indicative of our future financial condition or results of operations and should be read in conjunction with Management s Discussion and Analysis of Financial Condition and Results of Operations and our financial statements and accompanying notes included elsewhere herein.

	Year Ended December 31,				
	2013	**2012**	**2011**	**2010**	**2009**
	(in thousands, except per share amounts)				
Statements of Operations Data:					
Research contract revenue	$ 800	$ 800	$ 667	$	$
Total operating expenses	58,513	102,969	72,067	24,546	12,123
Loss from operations	(57,713)	(102,169)	(71,400)	(24,546)	(12,123)
Other income (expense), net	(579)	(13)	39	765	13
Change in fair value of warrants	1,185	6,050	7,583	(8,889)	4,461
Net loss	(57,107)	(96,132)	(63,778)	(32,670)	(7,649)
Basic and diluted net loss per share	$ (0.66)	$ (1.22)	$ (0.97)	$ (0.71)	$ (0.33)
Weighted average number of common shares outstanding: basic and diluted	85,943,175	78,546,112	66,003,789	46,003,996	23,108,039

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	Year Ended December 31,				
	2013	2012	2011	2010	2009
			(in thousands)		
Balance Sheet Data:					
Cash and cash equivalents	$ 68,204	$ 73,306	$ 104,713	$ 60,392	$ 48,839
Total assets	71,754	83,404	108,108	61,520	49,736
Warrant liabilities	11,776	12,962	19,425	27,311	18,471
Total liabilities	22,371	34,959	36,501	30,967	21,632
Stockholders equity	49,383	48,445	71,607	30,553	28,104

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

The following Management s Discussion and Analysis of Financial Condition and Results of Operations, as well as disclosures included under the heading Business and elsewhere in this Form 10-K, include forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. This Act provides a safe harbor for forward-looking statements to encourage companies to provide prospective information about themselves so long as they identify these statements as forward-looking and provide meaningful cautionary statements identifying important factors that could cause actual results to differ from the projected results. All statements other than statements of historical fact we make in this Form 10-K are forward-looking. In particular, statements preceded by, followed by or that include the words intends , estimates , plans , believes , expects , anticipates , should , could or similar forward-looking statements. These statements include, but are not limited to, statements regarding future sales and operating results; growth and trends of our company and our industry, generally; growth of the markets in which we participate; international events; product performance; the acquisition of or investment in other entities; the construction of new or refurbishment of existing facilities by us; our ability to successfully develop and commercialize our therapeutic products; our ability to expand our long-term business opportunities; financial projections and estimates and their underlying assumptions; and future performance. All of such statements are subject to certain risks and uncertainties, many of which are difficult to predict and generally beyond our control, that could cause actual results to differ materially from those expressed in, or implied or projected by, the forward-looking information and statements. These risks and uncertainties include, but are not limited to: whether Ad-RTS-IL-12 + veledimex, DC-RTS-IL-12 + veledimex, Palifosfamide, Darinaparsin, Indibulin, or any of our other therapeutic products will advance further in the clinical trials process and whether and when, if at all, they will receive final approval from the FDA or equivalent foreign regulatory agencies and for which indications; whether Ad-RTS-IL-12 + veledimex, DC-RTS-IL-12 + veledimex, Palifosfamide, Darinaparsin, Indibulin, and our other therapeutic products will be successfully marketed if approved; whether any of our synthetic biology platform discovery and development efforts will be successful; our ability to achieve the results contemplated by our collaboration agreements; the strength and enforceability of our intellectual property rights; competition from pharmaceutical and biotechnology companies; the development of and our ability to take advantage of the market for DNA-based biotherapeutics; our ability to raise additional capital to fund our operations on terms acceptable to us; general economic conditions; and the other risk factors contained in this Annual Report on Form 10-K. Forward-looking statements reflect our current expectations and are inherently uncertain. Our actual results may differ significantly from our expectations. We assume no obligation to update this forward-looking information. The section herein entitled Risk Factors describes some, but not all, of the factors that could cause these differences.

The following discussion and analysis should be read in conjunction with our historical financial statements and the notes to those financial statements which are included in Item 8 of Part II of this Form 10-K.

Business Overview

ZIOPHARM Oncology, Inc. is a biopharmaceutical company that seeks to acquire, develop and commercialize, on its own or with commercial partners, a diverse portfolio of cancer therapies that can address unmet medical needs through synthetic biology. Pursuant to an exclusive channel agreement with Intrexon Corporation, or

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Intrexon, we obtained rights to Intrexon s synthetic biology platform for use in the field of oncology, which included two existing clinical stage product candidates, Ad-RTS-IL-12 + veledimex and DC-RTS-IL-12 + veledimex. The synthetic biology platform employs an inducible gene-delivery system that enables controlled delivery of genes that produce therapeutic proteins to treat cancer. Ad-RTS-IL-12 + veledimex is our lead drug candidate, which uses this gene delivery system to produce Interleukin-12, or IL-12, a potent, naturally occurring anti-cancer protein. We are currently studying Ad-RTS-IL-12 + veledimex in two Phase 2 studies, the first for the treatment of metastatic melanoma, and the second for the treatment of metastatic breast cancer, and expect to announce early preliminary data from these Phase 2 studies in the fourth quarter of 2014. We plan to continue to combine Intrexon s synthetic biology platform with our capabilities to translate science to the patient setting to develop additional products to stimulate key pathways, including those used by the body s immune system to inhibit the growth and metastasis of cancers. We have numerous programs under development and expect to file multiple investigational new drug, or IND, applications through 2015. We also have a portfolio of small molecule drug candidates, which are no longer a strategic focus of our development activities for which we are seeking partners to pursue further development and potential commercialization.

Enabling Technology

Synthetic biology entails the application of engineering principles to biological systems for the purpose of designing and constructing new biological systems or redesigning/modifying existing biological systems. Biological systems are governed by DNA, the building blocks of gene programs, which control cellular processes by coding for the production of proteins and other molecules that have a functional purpose and by regulating the activities of these molecules. This regulation occurs via complex biochemical and cellular reactions working through intricate cell signaling pathways, and control over these molecules modifies the output of biological systems. Synthetic biology has been enabled by the application of information technology and advanced statistical analysis, also known as bioinformatics, to genetic engineering, as well as by improvements in DNA synthesis. Synthetic biology aims to engineer gene-based programs or codes to modify cellular function to achieve a desired biological outcome. Its application is intended to allow more precise control of drug concentration and dose, thereby improving the therapeutic index associated with the resulting drug.

On January 6, 2011, we entered into an Exclusive Channel Partner Agreement with Intrexon, which we refer to as the Channel Agreement, to develop and commercialize novel DNA-based therapeutics in the field of cancer treatment by combining Intrexon s synthetic biology platform with our capabilities to translate science to the patient setting. As a result, our DNA synthetic biology platform employs an inducible gene-delivery system that enables controlled delivery of genes that produce therapeutic proteins to treat cancer. The first example of this regulated controlled delivery is achieved by producing IL-12, a potent, naturally occurring anti-cancer protein, under the control of Intrexon s proprietary biological switch to turn on/off the therapeutic protein expression at the tumor site. We and Intrexon refer to this switch as the RheoSwitch Therapeutic System® or RTS® platform. Our initial drug candidates being developed using the synthetic biology platform are Ad-RTS-IL-12 + veledimex and DC-RTS-IL-12 + veledimex with a current focus on Ad-RTS-IL-12 + veledimex.

We have demonstrated that we are able to simultaneously express multiple effectors under control of the RTS® platform from the same construct. In mice, we have also shown that we are able to express multigenic DNA constructs in an embedded, controlled bioreactor, by injecting into skeletal muscle and measuring the DNA-coded proteins in the blood. Furthermore, we have also demonstrated the ability to express these same three genes under RTS® platform control in mesenchymal stem cells, or MSCs.

More detailed descriptions of Ad-RTS-IL-12 + veledimex, DC-RTS-IL-12 + veledimex, palifosfamide, darinaparsin and indibulin and our clinical development plans for each, are set forth in this report under the caption

Business Product Candidates.

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Product candidates

The following chart identifies our current synthetic biology product candidates and their stage of development, each of which are described in more detail below.

Synthetic Biology Programs:

Ad-RTS-IL-12 + veledimex. Ad-RTS-IL-12 + veledimex is currently being tested in two Phase 2 studies, the first for the treatment of metastatic melanoma, and the second for the treatment of unresectable recurrent or metastatic breast cancer. Ad-RTS-IL-12 + veledimex is our lead drug candidate, which uses our gene delivery system to produce Interleukin-12, or IL-12, a potent, naturally occurring anti-cancer protein.

Interleukin-12 (IL-12) is a potent immunostimulatory cytokine which activates and recruits dendritic cells that facilitate the cross-priming of tumor antigen-specific T cells. Intratumoral administration of Ad-RTS-IL-12 + veledimex, which allows for adjustment of IL-12 gene expression upon varying the dose of veledimex, is designed to reduce the toxicity elicited by systemic delivery of IL-12, and increase efficacy through high intratumoral expression.

In March 2013, we announced the initiation of a randomized, open label Phase 2 clinical study of Ad-RTS-IL-12 + veledimex to treat metastatic breast cancer. The two-part, multi-center U.S. study is enrolling patients with unresectable, recurrent or metastatic breast cancer who have visible lesions or lesions accessible by injection. The study is designed to assess the safety and efficacy of the therapeutic Ad-RTS-IL-12 + veledimex. Part one of this two-part study will consist of a safety assessment for Ad-RTS-IL-12 + veledimex while part two will consist of an efficacy evaluation of the Ad-RTS-IL-12 + veledimex. The primary endpoint of the study is rate of progression-free survival at 16 weeks. Secondary endpoints include objective response rate, duration of response and evaluation of pharmacodynamic tumor markers. Initiation of the clinical study was followed by the presentation of results, from a study in a breast cancer murine preclinical model, demonstrating the anti-tumor effects and tolerability of Ad-RTS-IL-12 + veledimex. The data were presented at the American Association for Cancer Research 2013 Annual Meeting in April.

In May 2013, we announced promising results from nonclinical and Phase 1 studies in metastatic melanoma using Ad-RTS-IL-12 + veledimex. In these studies, the controlled expression of IL-12, through a regulatable gene therapy strategy, was found to limit systemic toxicity while inducing biological and clinical activity. The findings were presented in an oral session at the 16th Annual Meeting of the American Society of Gene and Cell Therapy (ASGCT). In June, updated results were presented at the 2013 American Society for Clinical Oncology (ASCO). Ad-RTS-IL-12 + veledimex induce production of IL-12 mRNA in the tumor microenvironment (switch

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on). Upon removal of veledimex, IL-12 mRNA levels return to baseline (switch off). Following treatment with Ad-RTS-IL-12 + veledimex, increases in TILs (CD8+, CD45RO+) were observed in the tumor microenvironment. Clinical activity was observed in injected and non-injected lesions primarily at the higher doses of veledimex. Inflammation, shrinkage, flattening, and depigmentation of lesions correlated with the elevated serum levels of IFN-g. Ad-RTS-hL-12 + veledimex therapy was generally well-tolerated and its safety profile is consistent with other immunotherapies.

We reported the controlled local expression of IL-12 as an immunotherapeutic treatment of glioma through the use of the RheoSwitch Therapeutic System® (RTS®) at the October 2013 AACR-NCI-EORTC. Veledimex brain penetration was demonstrated in normal mice and monkeys with intact blood brain barrier. Treatment with Ad-RTS-IL-12 + veledimex and DC-RTS-IL-12 + veledimex both demonstrated dose-related increase in survival in the mouse GL-261 glioma model with no adverse clinical signs observed. In December 2013, we announced unanimous Recombinant DNA Advisory Committee (RAC) approval for the initiation of a Phase 1 study of Ad-RTS-IL-12 + veledimex, an adenoviral vector engineered to express interleukin-12 under the control of veledimex, an oral activator, in subjects with recurrent or progressive high grade gliomas (brain cancer). We are in discussions with the FDA regarding this indication and anticipate initiation of a Phase 1 clinical study in the first half of 2014. Glioblastoma is by far the most frequent malignant glioma and is associated with a particularly aggressive course and dismal prognosis. The current standard of care is based in surgical resection to the maximum feasible extent, followed by radiotherapy and concomitant adjuvant temozolomide. Such aggressive treatment, however, is associated with only modest improvements in survival. Newly diagnosed glioblastoma patients have a median overall survival, or OS, of 11-17 month.

Also in December 2013, we presented positive interim results from the ongoing Phase 1/2 study of Ad-RTS-IL-12 + veledimex in patients with advanced melanoma. The results from this multicenter study were presented at Melanoma Bridge 2013 Conference at the session Best Abstracts on News in Immunotherapy , an international conference co-sponsored by Istituto Nazionale Tumori Fondazione, Sidra Medical and Research Center, and the Society for ImmunoTherapy of Cancer that is being held in Naples, Italy. In this study, 21 patients with unresectable, recurrent stage III/IV melanoma have been treated with intratumoral injections of Ad-RTS-IL-12 + veledimex and the oral activator veledimex. The purpose of the study is to evaluate the safety and tolerability of the Ad-RTS-IL-12 + veledimex and veledimex therapy, determine tumor and immune response, and select the optimal dose and schedule of veledimex for future study. To date, expression of IL-12 mRNA in study subjects tumors was determined to be controlled by veledimex. In addition, upon stopping veledimex dosing, expression of the IL-12 mRNA returned to baseline levels, demonstrating the on and off control of Intrexon Corporation s RheoSwitch Therapeutic System® platform. In this dose range, results to date demonstrate that Ad-RTS-IL-12 + veledimex has potent biologic activity, as measured by on-mechanism and on-target toxicity and response in injected and non-injected lesions. Following treatment, 11 of 16 evaluable patients have demonstrated a response of stable disease or better on a per lesion basis. The most common severe adverse events (SAEs) were pyrexia, hypotension, mental status changes, and cytokine release syndrome. Four of seven patients with SAEs had veledimex dosing stopped during cycle 1. Three had SAEs during subsequent cycles, and stopped veledimex dosing at that time. Importantly, all SAEs were reversed after veledimex dosing was stopped, demonstrating the on and off control of veledimex on gene expression.

Also in December 2013, we announced preliminary results from the ongoing Phase 2 clinical study of Ad-RTS-IL-12 + veledimex in patients with unresectable recurrent or metastatic breast cancer. The findings were reported in a poster presentation at the San Antonio Breast Cancer (SABC) Symposium in San Antonio, Texas. This multicenter Phase 2 study is designed to evaluate the safety and efficacy of Ad-RTS-IL-12 + veledimex in subjects with recurrent/metastatic breast cancer with accessible tumor(s). The primary endpoint of the study is rate of progression-free survival at 16 weeks. Secondary objectives include objective response rate, duration of response and evaluation of pharmacodynamic tumor markers. Six patients were evaluable for safety at the time of presentation. The

most common severe adverse events (SAEs) were neutropenia, AST elevation and pyrexia. Importantly, in the absence of disease progression, all SAEs were reversed after veledimex dosing was stopped, demonstrating the on and off control of veledimex on gene expression. Preliminary monotherapy PFS rate

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was reported for two patients to date, with one subject progressing at 12 weeks and a second at 16 weeks. Recruitment for the Phase 2 clinical trial is ongoing to refine the dose, schedule and optimal combination regimen.

The Company is advancing the Ad-RTS-IL-12 + veledimex platform in melanoma, breast cancer and glioblastoma.

We are in the process of finalizing clinical protocol designs that will lead to the initiation of Phase 2 studies in the combination with standard of care, or SOC, in the first half of 2014 for the treatment of metastatic melanoma and metastatic breast cancer. Melanoma, breast cancer, and glioma (detailed below) represent significant market potentials with high unmet medical needs. The incidence of melanoma is 76,690, breast cancer is 234,580, and glioblastoma is 18,000 with the majority of patients needing other, currently non available therapies to treat the disease and improve outcomes.

DC-RTS-IL-12 + veledimex. We historically completed enrollment in a Phase 1 dose escalation study of DC-RTS-IL-12 + veledimex in the second quarter of 2012 in the United States. DC-RTS-IL-12 + veledimex employs intratumoral injection of modified dendritic cells from each patient and oral dosing of veledimex to turn on in vivo expression of IL-12. DC-RTS-IL-1 + veledimex 2, through the RTS® platform, controls the timing and level of transgene expression. The RTS® technology functions as a gene switch for the regulated expression of human IL-12 in the patients dendritic cells which are transduced with a replication incompetent adenoviral vector carrying the IL-12 gene under the control of the RTS® platform. Currently, there are no actively enrolling studies using DC-RTS-IL-12 + veledimex, as we have prioritized our clinical development efforts on Ad-RTS-IL-12 + veledimex.

Earlier Stage Programs. At the October 2013 AARC-NCI-EORTC we also presented results showing systemic expression of three distinct immune effectors from a single RTS® regulated multigenic construct in mice, in vitro data demonstrating the potential use of MSCs for tumor-targeted delivery of single or multiple RTS® regulated cancer immunotherapies, and data demonstrating functional single chain variable fragment-Fc fusion proteins as an alternate approach to monoclonal antibodies which are more amenable for multi-genic therapies.

We are actively pursuing several synthetic biology approaches, including gene delivery with human MSCs and functional single chain variable fragment-Fc fusion proteins and multigenic approaches in our discovery pipeline to address unmet medical needs in cancer that are expected to result in multiple INDs planned through 2015.

Small Molecule Programs

Palifosfamide, ZIO-201. The small molecule palifosfamide, or isophosphoramide mustard, is a proprietary active metabolite of the pro-drug ifosfamide. Because palifosfamide is the stabilized active metabolite of ifosfamide and a distinct pharmaceutical composition without the acrolein or chloroacetaldehyde metabolites we believe that the administration of palifosfamide may be an effective and well-tolerated agent to treat cancer. In addition to anticipated lower toxicity, palifosfamide may have other advantages over ifosfamide and cyclophosphamide. Palifosfamide cross-links DNA differently than the active metabolite of cyclophosphamide, resulting in a different activity profile. We are seeking to out-license palifosfamide.

Soft Tissue Sarcoma. Previously we have studied palifosfamide in combination with doxorubicin in patients with soft tissue sarcoma. In March 2013, we announced that the Phase 3 study, PICASSO 3, did not meet its primary endpoint of progression-free survival, and that we would terminate our development program in metastatic soft tissue sarcoma. PICASSO 3 study data was presented at the 2013 European Cancer Congress.

Small-Cell Lung Cancer. Small-Cell Lung Cancer, or SCLC, is almost exclusively associated with smoking. Standard of care for SCLC, which is etoposide and platinum therapy, has changed little in decades. Published

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studies of ifosfamide in combination with standard of care have evidenced enhanced efficacy but also with enhanced side effects, providing for an unfavorable benefit to risk association. We believe that combining palifosfamide with standard of care could offer a separation of enhanced efficacy from increased toxicity.

Data from a Phase 1 trial of palifosfamide in combination with etoposide and carboplatin informed appropriate dosing for initiating an adaptive Phase 3 trial in first-line, metastatic SCLC. In June 2012, the Company initiated an international, multi-center, open-label, adaptive, randomized study of palifosfamide in combination with carboplatin and etoposide, or PaCE, chemotherapy versus carboplatin and etoposide, or CE, alone in chemotherapy naïve patients with metastatic small cell lung cancer, which we refer to as MATISSE. The trial s primary endpoint is overall survival.

Based on the outcome of PICASSO 3 in soft tissue sarcoma and the resulting revision in the Company s development plans for palifosfamide, enrollment in this study was suspended with 188 patients enrolled. The interim analysis of overall survival events in MATISSE is forecasted to be reached during the second half of 2014. We are seeking to out-license palifosfamide on a global basis.

Darinaparsin, ZIO-101. Darinaparsin is an anti-mitochondrial (organic arsenic) compound (covered by issued patents and pending patent applications in the United States and in foreign countries). Phase 1 testing of the intravenous, or IV, form of darinaparsin in solid tumors and hematological cancers was completed. We reported clinical activity and a safety profile from these studies as predicted by preclinical results. We subsequently completed Phase 2 studies in advanced myeloma, primary liver cancer and in certain other hematological cancers. At the May 2009 annual meeting of ASCO, we reported favorable results from the IV trial in lymphoma, particularly peripheral T-cell lymphoma, or PTCL. A Phase 1 trial in solid tumors with an oral form of darinaparsin has completed enrollment. We have obtained Orphan Drug Designation for darinaparsin in the United States and Europe for the treatment of PTCL and have entered into a licensing agreement with Solasia Pharma K.K., or Solasia, for the Asia/Pacific territory with a focus on IV-administered darinaparsin in PTCL. Clinical studies are currently ongoing with Solasia. We are seeking to out-license darinaparsin for territories not covered by our agreement with Solasia.

Indibulin, ZIO-301. Indibulin is a novel, small molecule inhibitor of tubulin polymerization and is potentially safer than other tubulin inhibitors as no neurotoxicity has been observed in preclinical studies or in Phase 1 clinical trials. Indibulin has a different pharmacological profile from other tubulin inhibitors currently on the market as it binds to a unique site on tubulin and is active in multi-drug-resistant (MDR-1, MRP-1) and taxane-resistant tumors. A Phase 1 study was conducted in late stage metastatic breast cancer and was found to be safe and tolerable. We are seeking to out-license indibulin on a global basis.

Development Plans

We are currently pursuing several clinical development opportunities, principally in our synthetic biology programs. We are also evaluating additional potential preclinical candidates and continuing discovery efforts aimed at identifying other potential product candidates under our Channel Agreement with Intrexon. In addition, we may seek to enhance our pipeline in synthetic biology through highly focused strategic transactions, which may include acquisitions, partnerships and in-licensing activities. We are actively seeking to out-license some or all of our small molecule programs to further support our synthetic biology efforts.

Our current plans involve using our principal internal financial resources to develop the synthetic biology program, with the intention of ultimately partnering or otherwise raising additional capital to support further development activities for our strategic product candidates. As of December 31, 2013, we had approximately $68.2 million of cash and cash equivalents. Based upon our current plans, we anticipate that our cash resources will be sufficient to fund our operations into the second quarter of 2015. This forecast of cash resources is forward-looking information that

involves risks and uncertainties, and the actual amount of our expenses could vary materially and adversely as a result of a number of factors, including the factors discussed in the Risk

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Factors section of this prospectus supplement and the uncertainties applicable to our forecast for the overall sufficiency of our capital resources. We have based our estimates on assumptions that may prove to be wrong, and our expenses could prove to be significantly higher than we currently anticipate.

Furthermore, the successful development of our product candidates is highly uncertain. Product development costs and timelines can vary significantly for each product candidate, are difficult to accurately predict, and will require us to obtain additional funding, either alone or in connection with partnering arrangements. Various statutes and regulations also govern or influence the development, manufacturing, safety, labeling, storage, record keeping and marketing of each product. The lengthy process of seeking approval and the subsequent compliance with applicable statutes and regulations require the expenditure of substantial resources. Any failure by us to obtain, or any delay in obtaining, regulatory approvals could materially, adversely affect our business. To date, we have not received approval for the sale of any product candidates in any market and, therefore, have not generated any revenues from our product candidates.

Financial Overview

Overview of Results of Operations

Revenue

We recognize research and development funding revenue over the estimated period of performance. We have not generated product revenues since our inception. Unless and until we receive approval from the FDA and/or other regulatory authorities for our product candidates, we cannot sell our products and will not have product revenues.

Research and Development Expenses

Our research and development expense consists primarily of salaries and related expenses for personnel, costs of contract manufacturing services, costs of facilities and equipment, fees paid to professional service providers in conjunction with our clinical trials, fees paid to research organizations in conjunction with preclinical animal studies, costs of materials used in research and development, consulting, license and milestone payments and sponsored research fees paid to third parties.

We have not accumulated and tracked our internal historical research and development costs or our personnel and personnel-related costs on a program-by-program basis. Our employee and infrastructure resources are allocated across several projects, and many of our costs are directed to broadly applicable research endeavors. As a result, we cannot state the costs incurred for each of our oncology programs on a program-by-program basis.

For the year ended December 31, 2013, our clinical projects included two Phase 3 projects for palifosfamide. The expenses for our Phase 3 palifosfamide study in STS incurred by us to third parties were $11.3 million for the year ended December 31, 2013 and $46.0 million from the project inception in July 2010 through December 31, 2013. The expenses for our Phase 3 palifosfamide study in SCLC incurred by us to third parties were $3.6 million for the year ended December 31, 2013, and $14.4 million from the project inception in December 2011 through December 31, 2013.

Our future research and development expenses in support of our current and future programs will be subject to numerous uncertainties in timing and cost to completion. We test potential products in numerous preclinical studies for safety, toxicology and efficacy. We may conduct multiple clinical trials for each product. As we obtain results from trials, we may elect to discontinue or delay clinical trials for certain products in order to focus our resources on

more promising products or indications. Completion of clinical trials may take several years or more, and the length of time generally varies substantially according to the type, complexity, novelty and intended use of a product. It is not unusual for preclinical and clinical development of each of these types of products to require the expenditure of substantial resources.

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We estimate that clinical trials of the type generally needed to secure new drug approval are typically completed over the following timelines:

The duration and the cost of clinical trials may vary significantly over the life of a project as a result of differences arising during clinical development, including, among others, the following:

- The number of clinical sites included in the trials;
- The length of time required to enroll suitable patents;
- The number of patients that ultimately participate in the trials;
- The duration of patient follow-up to ensure the absence of long-term product-related adverse events; and
- The efficacy and safety profile of the product.

As a result of the uncertainties discussed above, we are unable to determine the duration and completion costs of our programs or when and to what extent we will receive cash inflows from the commercialization and sale of a product. Our inability to complete our programs in a timely manner or our failure to enter into appropriate collaborative agreements could significantly increase our capital requirements and could adversely impact our liquidity. These uncertainties could force us to seek additional, external sources of financing from time-to-time in order to continue with our product development strategy. Our inability to raise additional capital, or to do so on terms reasonably acceptable to us, would jeopardize the future success of our business.

General and Administrative Expenses

General and administrative expenses consist primarily of salaries, benefits and stock-based compensation, consulting and professional fees, including patent related costs, general corporate costs and facility costs not otherwise included in research and development expenses or cost of product revenue.

Other Income (Expense)

Other income (expense) consists primarily of changes in the fair value of warrants.

Results of Operations for the fiscal year ended December 31, 2013 versus December 31, 2012

Revenues Revenues for the years ended December 31, 2013 and 2012 were as follows:

	Year ended December 31,		
	2013	2012	Change

($ in thousands)				
Collaboration revenue	$ 800	$ 800	$	0%

Revenue for the year ended December 31, 2013 was the same as the year ended December 31, 2012. This is due to the continued recognition of income related to our entry into the collaboration agreement with Solasia Pharma K.K. on March 7, 2011. Under this agreement we received $5.0 million in research and development funding which we are recognizing over the estimated period of performance under the agreement, currently 75 months.

Research and Development Expenses Research and development expenses during the years ended December 31, 2013 and 2012 were as follows:

	Year ended December 31,			
	2013	2012	Change	
($ in thousands)				
Research and development	$ 42,852	$ 83,446	$ (40,594)	-49%

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Research and development expenses for year ended December 31, 2013 decreased by $40.6 million when compared to the year ended December 31, 2012. On March 26, 2013, we announced the decision to immediately terminate development of palifosfamide in first-line metastatic soft tissue sarcoma and during the quarter ended June 30, 2013, we completed a workforce reduction plan to reduce costs (see Note 4 in the accompanying financial statements). This resulted in lower costs of $7.2 million related to the Phase 3 palifosfamide study in SCLC as the decision was made to suspend enrollment pending further data, lower costs related to the Phase 3 palifosfamide study in STS of $3.1 million, lower clinical costs of $1.8 million, lower preclinical trial costs of $4.0 million, lower manufacturing costs of $5.3 million, lower employee-related costs of $4.2 million, and lower safety costs of $0.8 million. We also incurred an $18.7 million non-cash expense in 2012, related to our channel partnership arrangement with Intrexon, while we did not incur a similar expense in 2013. The decrease was partially offset by an increase of $4.5 million in discovery activities related to our synthetic biology program.

General and Administrative Expenses General and administrative expenses during the years ended December 31, 2013 and 2012 were as follows:

	Year ended December 31,			
	2013	2012	Change	
($ in thousands)				
General and administrative	$ 15,661	$ 19,523	$ (3,862)	-20%

General and administrative expenses for the year ended December 31, 2013 decreased by $3.9 million when compared to the year ended December 31, 2012. The decrease was primarily due to lower employee-related costs of $1.9 million as a result of our workforce reduction plan (see Note 4 in the accompanying financial statements) as well as $1.9 million in non-employee contracted costs and other costs of $0.1 million.

Other Income (Expense) Other income (expense) during the years ended December 31, 2013 and 2012 were as follows:

	Year ended December 31,			
	2013	2012	Change	
($ in thousands)				
Other income (expense), net	$ (579)	$ (13)	$ (566)	4354%
Change in fair value of warrants	1,185	6,050	(4,865)	-80%
Total	$ 606	$ 6,037	$ (5,431)	

The decrease in other income (expense) from the year ended December 31, 2013 compared to the year ended December 31, 2012 was due primarily to the change in the fair value of liability-classified warrants, which yielded a gain of $1.2 million in 2013 as compared to a gain of $6.1 million in 2012. The change in liability-classified warrants is primarily attributable to the increase in our stock price, offset by a decrease in the remaining term and a decrease in volatility. Additional changes are attributable to increased state tax refunds and decreased interest rates on invested funds. This gain is offset by a loss on disposition of property, plant and equipment of $0.6 million. In addition, we recognized a loss on disposal of property, plant and equipment of $0.6 million in 2013.

Results of Operations for the fiscal year ended December 31, 2012 versus December 31, 2011

Revenues Revenues for the years ended December 31, 2012 and 2011 were as follows:

	Year ended December 31,			
	2012	2011	Change	
($ in thousands)				
Collaboration revenue	$ 800	$ 667	$ 133	20%

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Revenue for the year ended December 31, 2012 increased by $0.1 million from the year ended December 31, 2011. The increase was due to our receipt of funds under our collaboration agreement with Solasia to further the research and development of darinaparsin. We recognize the research and development funding revenue relating to this collaboration agreement in equal monthly amounts over the estimated period of performance of 75 months commencing March 2011.

Research and Development Expenses Research and development expenses during the years ended December 31, 2012 and 2011 were as follows:

	Year ended December 31,			
	2012	2011	Change	
($ in thousands)				
Research and development	$ 83,446	$ 57,083	$ 26,363	46%

Research and development expenses for the year ended December 31, 2012 increased by $26.4 million from the year ended December 31, 2011. The increase was due to the following changes since 2011: higher trial costs of $10.8 million related to the Phase 3 palifosfamide study in SCLC, which started in 2012; increased preclinical trial costs of $1.8 million due to additional studies needed to assist in NDA filing preparation; other clinical costs of $0.8 million; manufacturing activity costs of $5.6 million needed to support existing trials and further development of drugs; a $1.3 million increase in non-cash expense related to our Channel Agreement over 2011; salary and employee-related costs of $5.6 million due to increased headcount to support increases in Research and Development activities discussed above; and $0.9 million related to a new safety database, offset by other cost reductions of ($0.4) million.

General and Administrative Expenses General and administrative expenses during the years ended December 31, 2012 and 2011 were as follows:

	Year ended December 31,			
	2012	2011	Change	
($ in thousands)				
General and administrative	$ 19,523	$ 14,984	$ 4,539	30%

General and administrative expenses for the year ended December 31, 2012 increased by $4.5 million from the year ended December 31, 2011. The increase was primarily due to higher salary and higher employee-related costs of $2.0 million to support increased activity in clinical studies, non-employee contracted costs of $1.2 million, costs of $1.0 million related to our restructuring and other costs of $0.3 million.

Other Income (Expense) Other income (expense) during the years ended December 31, 2012 and 2011 were as follows:

	Year ended December 31,		
	2012	2011	Change

($ in thousands)				
Other income, net	$ (13)	$ 39	$ (52)	-133%
Change in fair value of warrants	6,050	7,583	(1,533)	-20%
Total	$ 6,037	$ 7,622	$ (1,585)	

The decrease in other income (expense) from the year ended December 31, 2012 compared to the year ended December 31, 2011 was due primarily to the change in the fair value of liability-classified warrants, which yielded a gain of $6.1 million in 2012 as compared to a gain of $7.6 million in 2011. The change in liability-classified warrants is attributable to the decrease in our stock price, decrease in remaining term and a decrease in volatility. Additional changes are attributable to increased state tax refunds and decreased interest rates on invested funds.

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Liquidity and Capital Resources

As of December 31, 2013, we had approximately $68.2 million in cash and cash equivalents, compared to $73.3 million in cash and cash equivalents as of December 31, 2012. We anticipate that our cash resources will be sufficient to fund our operations into the second quarter of 2015. However, changes may occur that would consume our existing capital prior to that time, including the scope and progress of our research and development efforts and changes in governmental regulation. Actual costs may ultimately vary from our current expectations, which could materially impact our use of capital and our forecast of the period of time through which our financial resources will be adequate to support our operations. We have estimated the sufficiency of our cash resources based in part on the discontinuation of the PICASSO 3 pivotal trial for first-line metastatic STS and our adaptive Phase 3 trial for first-line SCLC for IV palifosfamide and our current timing expectations for interim overall survival data in the MATISSE trial. Also included in the estimate are the advancement of our synthetic biology product candidates in the clinic under our exclusive channel partnership with Intrexon, and we expect that the costs associated with these and additional product candidates will increase the level of our overall research and development expenses significantly going forward.

Although all human clinical trials are expensive and difficult to design and implement, we believe that due to complexity, costs associated with clinical trials for synthetic biology products are greater than the corresponding costs associated with clinical trials for small molecule candidates.

In addition to these factors, our actual cash requirements may vary materially from our current expectations for a number of other factors that may include, but are not limited to, changes in the focus and direction of our development programs, competitive and technical advances, costs associated with the development of our product candidates, our ability to secure partnering arrangements, and costs of filing, prosecuting, defending and enforcing our intellectual property rights. If we exhaust our capital reserves more quickly than anticipated, regardless of the reason, and we are unable to obtain additional financing on terms acceptable to us or at all, we will be unable to proceed with development of some or all of our product candidates on expected timelines and will be forced to prioritize among them.

We expect that we will need additional financing to support our long-term plans for clinical trials and new product development. We expect to finance our cash needs through the sale of equity securities, strategic collaborations and/or debt financings, or through other sources that may be dilutive to existing stockholders. There can be no assurance that we will be able to obtain funding from any of these sources or, if obtained, what the terms of such funding(s) may be, or that any amount that we are able to obtain will be adequate to support our working capital requirements until we achieve profitable operations. We have no current committed sources of additional capital. Recently, capital markets have experienced a period of instability that may severely hinder our ability to raise capital within the time periods needed or on terms we consider acceptable, if at all. If we are unable to raise additional funds when needed, we may not be able to continue development and regulatory approval of our products, or we could be required to delay, scale back or eliminate some or all our research and development programs.

Recent Financing Transactions

October 2013 Public Offering

On October 23, 2013, the Company entered into an underwriting agreement with J.P. Morgan Securities LLC, as representative of the several underwriters named therein, relating to the issuance and sale of 14,300,000 shares of our common stock. The price to the public in the offering was $3.50 per share, and the underwriters agreed to purchase the shares from the Company pursuant to the underwriting agreement at a purchase price of $3.29 per share. Under the terms of the underwriting agreement, the Company also granted the underwriters an option, exercisable for 30 days, to

purchase up to an additional 2,145,000 shares of common stock at a purchase price of $3.29 per share, and the underwriters elected to exercise such option in full. The offering was made pursuant to the Company s effective registration statement on Form S-3 (Registration Statement No. 333-177793) previously

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filed with the SEC, and a prospectus supplement thereunder. The underwriters purchased the 14,300,000 shares and the additional 2,145,000 shares on October 29, 2013. The net proceeds from the offering were approximately $53.9 million after deducting underwriting discounts and estimated offering expenses payable by the Company.

Cash Increases and (Decreases)

The following table summarizes our net increase (decrease) in cash and cash equivalents for the years ended December 31, 2013, 2012 and 2011 and the period from September 9, 2003 (date of inception) through December 31, 2013:

	Year ended December 31,			Period from September 9, 2003 (date of inception) through December 31, 2013
($ in thousands)	**2013**	**2012**	**2011**	
Net cash provided by (used in):				
Operating activities	$ (59,509)	$ (78,832)	$ (38,835)	$ (281,148)
Investing activities	(131)	(1,559)	(1,156)	(4,757)
Financing activities	54,538	48,984	84,312	354,108
Net increase (decrease) in cash and cash equivalents	$ (5,102)	$ (31,407)	$ 44,321	$ 68,203

Net cash used in operating activities was $59.5 million for the year ended December 31, 2013 compared to $78.8 million for the year ended December 31, 2012, a decrease of $19.3 million. On March 26, 2013, we announced the decision to immediately terminate development of palifosfamide in first-line metastatic soft tissue sarcoma and during the quarter ended June 30, 2013, we completed a workforce reduction plan to reduce costs (see Note 4 in the accompanying financial statements). This resulted in a decrease in the loss from operations due to decreased research and development and general and administrative activities, along with a decrease in cash used for prepaid expenses attributable to a related party prepayment (see Note 7 to the financial statements, Related Party Transactions), offset by an increase in accrued expenses. Net cash used in operating activities was $78.8 million for the year ended December 31, 2012 compared to $38.8 million for the year ended December 31, 2011. The $40.0 million increase was due to an increase in prepaid expenses and other current assets attributable to a related party prepayment (see Note 7 to the financial statements, Related Party Transactions), as well as an increase in the net loss from operations, caused by increased research and development activities, excluding non-cash expenses of the change in fair value of warrants, stock-based compensation, and in process research and development.

Net cash used in investing activities was $0.1 million for the year ended December 31, 2013 compared to $1.6 million for the year ended December 31, 2012. The $1.5 million decrease was due to decreased spending on property, plant, and equipment in the New York and Boston offices. Net cash used in investing activities was $1.6 million for the year ended December 31, 2012 compared to $1.2 million for the year ended December 31, 2011. The $0.4 million increase was due to the build out of additional space in our Boston and New York offices including leasehold improvements and furniture and fixtures along with software additions.

Net cash provided by financing activities was $54.5 million for the year ended December 31, 2013 compared to $49.0 million for the year ended December 31, 2012. The change is primarily attributable to a $53.9 million financing that occurred during the year ended December 31, 2013 versus a $49.2 million financing that occurred during the year ended December 31, 2012. Net cash provided by financing activities was $49.0 million for the year ended December 31, 2012 compared to $84.3 million for the year ended December 31, 2011. The change is primarily attributable to a $49.2 million financing that occurred during the year ended December 31, 2012 versus a $71.2 million financing and warrant exercises of $12.3 million that occurred during the year ended December 31, 2011.

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Operating capital and capital expenditure requirements

We anticipate that losses will continue for the foreseeable future. At December 31, 2013, our accumulated deficit was approximately $340.8 million. Our actual cash requirements may vary materially from those planned because of a number of factors including:

- Changes in the focus, direction and pace of our development programs;
- Competitive and technical advances;
- Costs associated with the development of our product candidates;
- Our ability to secure partnering arrangements;
- Costs of filing, prosecuting, defending and enforcing any patent claims and any other intellectual property rights, or other developments, and
- Other matters identified under Part II Item 1A. Risk Factors.

Working capital as of December 31, 2013 was $62.5 million, consisting of $70.3 million in current assets and $7.8 million in current liabilities. Working capital as of December 31, 2012 was $61.4 million, consisting of $80.3 million in current assets and $18.9 million in current liabilities.

Contractual obligations

The following table summarizes our outstanding obligations as of December 31, 2013 and the effect those obligations are expected to have on our liquidity and cash flows in future periods:

($ in thousands)	Total	Less than 1 year	2 - 3 years	4 - 5 years	More than 5 years
Operating leases	$ 4,354	$ 1,196	$ 2,232	$ 926	$
Royalty and license fees	2,125	1,275	550	300	
Contract milestone payments	372	293	79		
Total	$ 6,851	$ 2,764	$ 2,861	$ 1,226	$

Our commitments for operating leases relate to the lease for our corporate headquarters in Boston, MA, and office space in New York, NY. Our commitments for royalty and license fees relate to our patent agreement with Baxter Healthcare Corporation, our royalty agreements with Southern Research Institute and Baxter Healthcare Corporation requiring minimum royalty payments, as well as our license agreement with The University of Texas M. D. Anderson

Cancer Center, requiring payment upon the first patient treated in a pivotal trial in darinaparsin, currently being developed under the License and Collaboration Agreement with Solasia. The contract milestone payments relate to our CRO agreements with Novella Clinical, Inc. The timing of the remaining contract milestone payments are dependent upon factors that are beyond our control, including our ability to recruit patients, the outcome of future clinical trials and any requirements imposed on our clinical trials by regulatory agencies. However, for the purpose of the above table, we have assumed that the payment of the milestones will occur within five years of December 31, 2013. On July 16, 2012, we decided to close our Germanton, Maryland office. In June 2013, we paid off the remainder of the Germantown, Maryland lease obligation. Included in the above table are obligations for the subleased portion of our Boston and New York offices as noted below and in Note 8 to the financial statements. We expect to receive a total of $118 thousand in the next year and $197 thousand in the next 2-3 years from our subtenant in the Boston office. We also expect to receive a total of $334 thousand in the next year and $612 thousand in the next 2-3 years, as well as the next 4-5 years, from our subtenant in the New York office.

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Critical Accounting Policies and Significant Estimates

Our management s discussion and analysis of our financial condition and results of operations is based upon 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 us 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 as well as the reported expenses during the reporting periods. We evaluate our estimates and judgments on an ongoing basis. Actual results may differ materially from these estimates under different assumptions or conditions.

We believe the following are our more significant estimates and judgments used in the preparation of our financial statements:

Clinical trial expenses;

Fair value measurements of stock based compensation and warrants; and

Income taxes.

Clinical Trial Expenses

Clinical trial expenses include expenses associated with CROs. The invoicing from CROs for services rendered can lag several months. We accrue the cost of services rendered in connection with CRO activities based on our estimate of site management, monitoring costs, and project management costs. We maintain regular communication with our CROs to gauge the reasonableness of our estimates. Differences between actual clinical trial expenses and estimated clinical trial expenses recorded have not been material and are adjusted for in the period in which they become known.

Fair Value Measurements of Stock Based Compensation and Warrants

Accounting standards define fair value, establish a framework for measuring fair value under generally accepted accounting principles and enhance disclosures about fair value measurements. Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. The standard describes a fair value hierarchy based on three levels of inputs, of which the first two are considered observable and the last unobservable, that may be used to measure fair value which are the following:

Level 1 Quoted prices in active markets for identical assets or liabilities.

Level 2 Inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or

can be corroborated by observable market data for substantially the full term of the assets or liabilities.

Level 3 Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

We make certain assumptions in order to value and expense our share-based compensation awards and liability classified warrants. In connection with valuing stock options and liability classified warrants we use the Black-Scholes model and the binomial model, respectively, which require us to estimate certain subjective assumptions. The key assumptions we make are: the expected volatility of our stock; the expected term of the award; and the expected forfeiture rate related to share based awards. In connection with our restricted stock programs, we make assumptions principally related to the forfeiture rate. The key assumptions used to estimate fair value for our warrants include current and expected stock prices, volatility, dividends, forward yield curves and discount rates.

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We review our valuation assumptions periodically and, as a result, we may change our valuation assumptions used to value share-based awards granted in future periods and warrants. Such changes may lead to a significant change in the expense we recognize in connection with share-based payments and warrants.

Income Taxes

In preparing our financial statements, we estimate our income tax liability in each of the jurisdictions in which we operate by estimating our actual current tax expense together with assessing temporary differences resulting from differing treatment of items for tax and financial reporting purposes. These differences result in deferred tax assets and liabilities, which, prior to the consideration for the need for a valuation allowance, are included on the balance sheet. Significant management judgment is required in assessing the realizability of our deferred tax assets. In performing this assessment, we consider whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. In making this determination, under the applicable financial accounting standards, we are allowed to consider the scheduled reversal of deferred tax liabilities, projected future taxable income, and the effects of tax planning strategies. Our estimates of future taxable income include, among other items, our estimates of future income tax deductions related to the exercise of stock options. In the event that actual results differ from our estimates, we adjust our estimates in future periods and we may need to establish a valuation allowance, which could materially impact our financial position and results of operations.

We account for uncertain tax positions using a more-likely-than-not threshold for recognizing and resolving uncertain tax positions. The evaluation of uncertain tax positions is based on factors that include, but are not limited to, changes in tax law, the measurement of tax positions taken or expected to be taken in tax returns, the effective settlement of matters subject to audit, new audit activity and changes in facts or circumstances related to a tax position. We evaluate uncertain tax positions on an annual basis and adjust the level of the liability to reflect any subsequent changes in the relevant facts surrounding the uncertain positions. Our liabilities for uncertain tax positions can be relieved only if the contingency becomes legally extinguished through either payment to the taxing authority or the expiration of the statute of limitations, the recognition of the benefits associated with the position meet the more-likely-than-not threshold or the liability becomes effectively settled through the examination process. We consider matters to be effectively settled once the taxing authority has completed all of its required or expected examination procedures, including all appeals and administrative reviews; we have no plans to appeal or litigate any aspect of the tax position; and we believe that it is highly unlikely that the taxing authority would examine or re-examine the related tax position. We also accrue for potential interest and penalties, related to unrecognized tax benefits in income tax expense.

Recent Accounting Pronouncements

For a discussion of new accounting standards please read Note 3, *Summary of Significant Accounting Principles* to our financial statements included in this report.

Off-Balance Sheet Arrangements

We currently do not have any special purpose entities or off-balance sheet financing arrangements.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Our exposure to market risk is limited to our cash. The goals of our investment policy are preservation of capital, fulfillment of liquidity needs and fiduciary control of cash and investments. We also seek to maximize income from our investments without assuming significant risk. To achieve our goals, we maintain our cash in interest-bearing cash

accounts. As all of our investments are cash deposits in a global bank, it is subject to minimal interest rate risk.

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Effect of Currency Exchange Rates and Exchange Rate Risk Management

We conduct clinical studies outside of the United States primarily in Western Europe. These business operations are not material at this time, therefore any currency fluctuations will not have a material impact on our financial position, results of operations or cash flows.

Item 8. Financial Statements and Supplementary Data

The information required by this Item 8 is contained on pages F-1 through F-48 of this annual report on Form 10-K and is incorporated herein by reference.

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

None.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures.

Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Accounting Officer, we have evaluated the effectiveness of our disclosure controls and procedures, as such term is defined under Rule 13a-15(e) or 15d-15(e) promulgated under the Exchange Act, as of December 31, 2013. Based on that evaluation, our Chief Executive Officer and Chief Accounting Officer have concluded that as of such date, our disclosure controls and procedures were effective.

Management s Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting for us. Internal control over financial reporting (as defined in Rule 13a-15(f) of the Exchange Act) is a process to provide reasonable assurance regarding the reliability of our financial reporting for external purposes in accordance with accounting principles generally accepted in the United States of America. Internal control over financial reporting includes maintaining records that in reasonable detail accurately and fairly reflect our transactions; providing reasonable assurance that transactions are recorded as necessary for preparation of our financial statements; providing reasonable assurance that receipts and expenditures of company assets are made in accordance with management authorization; and providing reasonable assurance that unauthorized acquisition, use or disposition of company assets that could have a material effect on our financial statements would be prevented or detected on a timely basis. Because of its inherent limitations, internal control over financial reporting is not intended to provide absolute assurance that a misstatement of our financial statements would be prevented or detected.

Management conducted an evaluation of the effectiveness, as of December 31, 2013, of our internal control over financial reporting based on the framework in *Internal Control Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission in 1992. Based on this evaluation, management concluded that our internal control over financial reporting was effective as of December 31, 2013.

McGladrey LLP, an independent registered public accounting firm, has issued an attestation report on our internal control over financial reporting as of December 31, 2013. That report is included in this annual report on Form 10-K.

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Changes in Internal Controls over Financial Reporting

There were no changes in our internal control over financial reporting during the quarter ended December 31, 2013 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None.

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PART III

Item 10. Directors, Executive Officers and Corporate Governance

Information in response to this Item is incorporated herein by reference to the information from our definitive proxy statement to be filed pursuant to Regulation 14A within 120 days after the end of the fiscal year covered by this annual report on Form 10-K under the sections entitled *Proposals Election of Directors, Executive Officers, Information Regarding the Board of Directors and Corporate Governance* and *Stock Ownership*.

Item 11. Executive Compensation

Information in response to this Item is incorporated herein by reference to the information from our definitive proxy statement to be filed pursuant to Regulation 14A within 120 days after the end of the fiscal year covered by this annual report on Form 10-K under the section entitled *Executive Compensation*.

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

Securities Authorized for Issuance under Equity Compensation Plans

Our Amended and Restated 2003 Stock Option Plan, or the 2003 Plan, and our 2012 Stock Option Plan, or the 2012 Plan, are our only equity compensation plans approved by our stockholders. The following table sets forth certain information as of December 31, 2013 with respect to the 2003 and 2012 Plans:

Plan Category	Number of Securities to be Issued Upon Exercise of Outstanding Options (A)	Weighted-Average Exercise Price of Outstanding Options (B)	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Securities Reflected in Column (A)) (C)
Equity compensation plans approved by stockholders:			
2003 Stock Option Plan	3,327,269	$ 4.07	
2012 Stock Option Plan	3,420,034	3.56	416,964
Total:	6,747,303	$ 3.81	416,964
Equity compensation plans not approved by stockholders:			
		$	
Total:		$	

Additional information in response to this Item is incorporated herein by reference to the information from our definitive proxy statement to be filed pursuant to Regulation 14A within 120 days after the end of the fiscal year covered by this annual report on Form 10-K under the section entitled *Stock Ownership*.

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

Information in response to this Item is incorporated herein by reference to the information from our definitive proxy statement to be filed pursuant to Regulation 14A within 120 days after the end of the fiscal year covered by this annual report on Form 10-K under the section entitled *Certain Relationships and Related Transactions and Information Regarding the Board of Directors and Corporate Governance*.

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Item 14. Principal Accountant Fees and Services

Information in response to this Item is incorporated herein by reference to the information from our definitive proxy statement to be filed pursuant to Regulation 14A within 120 days after the end of the fiscal year covered by this annual report on Form 10-K under the section entitled *Independent Registered Public Accounting Firm Fees and Other Matters*.

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PART IV

Item 15. Exhibits, Financial Statement Schedules

(1) Financial Statements:

The Financial Statements required to be filed by Item 8 of this annual report on Form 10-K, and filed in this Item 15, are as follows:

(2) Financial Statement Schedules:

Schedules are omitted because they are not applicable, or are not required, or because the information is included in the financial statements and notes thereto.

(3) Exhibits:

The exhibits which are filed or furnished with this report or which are incorporated herein by reference are set forth in the Exhibit Index beginning on page A-1, which is incorporated herein by reference.

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SIGNATURES

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

ZIOPHARM ONCOLOGY, INC.

Date: March 3, 2014

By: /s/ Jonathan Lewis
Jonathan Lewis

Chief Executive Officer

(Principal Executive Officer)

Date: March 3, 2014

By: /s/ Kevin G. Lafond
Kevin G. Lafond

Vice President, Chief Accounting Officer and Treasurer

(Principal Financial and Accounting Officer)

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

Signature	Title	Date
/s/ Jonathan Lewis Jonathan Lewis	Director and Chief Executive Officer (Principal Executive Officer)	March 3, 2014
/s/ Kevin G. Lafond Kevin G. Lafond	Vice President, Chief Accounting Officer and Treasurer (Principal Financial and Accounting Officer)	March 3, 2014
/s/ Murray Brennan Murray Brennan	Director	March 3, 2014
/s/ James Cannon	Director	March 3, 2014

James Cannon		
/s/ Wyche Fowler, Jr.		
Wyche Fowler, Jr.	Director	March 3, 2014
/s/ Randal J. Kirk		
Randal J. Kirk	Director	March 3, 2014
/s/ Timothy McInerney		
Timothy McInerney	Director	March 3, 2014
/s/ Michael Weiser		
Michael Weiser	Director	March 3, 2014

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ZIOPHARM Oncology, Inc. *(a development stage enterprise)*

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of

ZIOPHARM Oncology, Inc.

Boston, Massachusetts

We have audited the accompanying balance sheets of ZIOPHARM Oncology, Inc. (a development stage company) as of December 31, 2013 and 2012, and the related statements of operations, changes in preferred stock and stockholders equity (deficit), and cash flows for each of the three years in the period ended December 31, 2013, and for the period from September 9, 2003 (date of inception) through December 31, 2013. We also have audited ZIOPHARM Oncology, Inc s internal control over financial reporting as of December 31, 2013, based on criteria established in *Internal Control Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission in 1992. ZIOPHARM Oncology, Inc. s management is responsible for these financial statements, 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 report on internal control over financial reporting. Our responsibility is to express an opinion on these financial statements and an opinion on the Company s internal control over financial reporting 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 audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

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 *(a)* pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; *(b)* 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 *(c)* 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, the financial statements referred to above present fairly, in all material respects, the financial position of ZIOPHARM Oncology, Inc. as of December 31, 2013 and 2012, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2013 and from September 9, 2003

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(date of inception) through December 31, 2013, in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, ZIOPHARM Oncology, Inc. maintained, in all material respects, effective internal control over financial reporting as of December 31, 2013 and 2012, based on criteria established in *Internal Control Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

/s/ McGladrey LLP

Boston, Massachusetts

March 3, 2014

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ZIOPHARM Oncology, Inc. ***(a development stage enterprise)***

BALANCE SHEETS

(in thousands, except share and per share data)

	December 31, 2013	December 31, 2012
ASSETS		
Current assets:		
Cash and cash equivalents	$ 68,204	$ 73,306
Receivables	145	58
Prepaid expenses and other current assets	1,948	6,912
Total current assets	70,297	80,276
Property and equipment, net	801	1,994
Deposits	128	133
Other non current assets	528	1,001
Total assets	$ 71,754	$ 83,404
LIABILITIES AND STOCKHOLDERS EQUITY		
Current liabilities:		
Accounts payable	$ 422	$ 1,509
Accrued expenses	6,357	16,516
Deferred revenue current portion	800	800
Deferred rent current portion	212	39
Total current liabilities	7,791	18,864
Deferred revenue	1,933	2,733
Deferred rent	851	400
Warrant liabilities	11,776	12,962
Other long term liabilities	20	
Total liabilities	$ 22,371	$ 34,959
Commitments and contingencies (note 8)		
Stockholders equity:		
Preferred stock, $0.001 par value; 30,000,000 shares authorized and no shares issued and outstanding	$	$
Common stock, $0.001 par value; 250,000,000 shares authorized; 100,159,618 and 83,236,840 shares issued and outstanding at December 31, 2013 and 2012, respectively	100	83
Additional paid-in capital common stock	386,511	325,177

Additional paid-in capital warrants issued	3,603	6,909
Deficit accumulated during the development stage	(340,831)	(283,724)
Total stockholders equity	49,383	48,445
Total liabilities and stockholders equity	$ 71,754	$ 83,404

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

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ZIOPHARM Oncology, Inc. ***(a development stage enterprise)***

STATEMENTS OF OPERATIONS

(in thousands, except share and per share data)

	For the Year Ended December 31,			Period from September 9, 2003 (date of inception) through December 31, 2013
	2013	2012	2011	
Revenue	$ 800	$ 800	$ 667	$ 2,267
Operating expenses:				
Research and development	42,852	83,446	57,083	255,197
General and administrative	15,661	19,523	14,984	103,979
Total operating expenses	58,513	102,969	72,067	359,176
Loss from operations	(57,713)	(102,169)	(71,400)	(356,909)
Other income (expense), net	(579)	(13)	39	4,122
Change in fair value of warrants	1,185	6,050	7,583	11,956
Net loss	$ (57,107)	$ (96,132)	$ (63,778)	$ (340,831)
Basic and diluted net loss per share	$ (0.66)	$ (1.22)	$ (0.97)	
Weighted average common shares outstanding used to compute basic and diluted net loss per share	85,943,175	78,546,112	66,003,789	

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

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ZIOPHARM Oncology, Inc. ***(a development stage enterprise)***

STATEMENTS OF CHANGES IN PREFERRED STOCK

AND STOCKHOLDERS EQUITY (DEFICIT)

For the Period September 9, 2003 (date of inception) to December 31, 2013

(in thousands, except share and per share data)

	Preferred Stock and Warrants		Stockholders Equity (Deficit)					
	Series A Preferred Stock		Warrants to Purchase Series A Preferred Stock	Common Stock		Additional Paid-in Capital	Additional Paid-in Capital	Deficit Accumulated During the Development	Total Stockholders Equity/
	Shares	Amount	Warrants	Shares	Amount	Common Stock	Warrants	Stage	(Deficit)
Stockholders contribution, September 9, 2003	$	$		250,487	$	$ 500	$	$	$ 500
Net loss								(160)	(160)
Balance at December 31, 2003				250,487		500		(160)	340
Issuance of common stock				2,254,389	2	4,498			4,500
Issuance of common stock for services				256,749	1	438			439
Fair value of options/warrants issued for nonemployee services						13	251		264
Net loss								(5,687)	(5,687)
Balance at December 31, 2004				2,761,625	3	5,449	251	(5,847)	(144)

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

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ZIOPHARM Oncology, Inc. ***(a development stage enterprise)***

STATEMENTS OF CHANGES IN CONVERTIBLE PREFERRED STOCK

AND STOCKHOLDERS EQUITY (DEFICIT) (Cont.)

For the Period September 9, 2003 (date of inception) to December 31, 2013

(in thousands, except share and per share data)

	Convertible Preferred Stock and Warrants			Stockholder s Equity (Deficit)					
	Series A Convertible Preferred Stock Shares	Amount	Warrants to Purchase Series A Convertible Preferred Stock Warrants	Common Stock Shares	Amount	Additional Paid-in Capital Common Stock	Additional Paid-in Capital Warrants	Deficit Accumulated During the Development Stage	Total Stockholders Equity/ (Deficit)
Issuance of Series A convertible preferred stock (net of expenses of $1,340 and warrant cost of $1,683)	4,197,946	15,077							15,077
Fair value of warrants to purchase Series A convertible preferred stock			1,683						1,683
Issuance of common stock to EasyWeb Stockholders				189,922					
Conversion of Series A convertible preferred stock @ $0.001 into $0.001 common stock on September 13, 2005 at an exchange ratio of	(4,197,946)	(15,077)	(1,683)	4,197,823	4	15,073	1,683		

.500974						
Issuance of common stock for options	98,622		4			4
Fair value of options/warrants issued for nonemployee services			54	45		99
Net loss					(9,517)	(9,517)
Balance at December 31, 2005	7,247,992	7	20,580	1,979	(15,364)	7,202

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

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ZIOPHARM Oncology, Inc. ***(a development stage enterprise)***

STATEMENTS OF CHANGES IN PREFERRED STOCK

AND STOCKHOLDERS EQUITY (DEFICIT) (Cont.)

For the Period September 9, 2003 (date of inception) to December 31, 2013

(in thousands, except share and per share data)

	Preferred Stock and Warrants		Stockholders Equity (Deficit)					
	Series A Preferred Stock	Warrants to Purchase Series A Preferred Stock	Common Stock		Additional Paid-in Capital Common Stock	Additional Paid-in Capital Warrants	Deficit Accumulated During the Development Stage	Total Stockholders Equity/ (Deficit)
	Shares	Amount	Warrants	Shares	Amount			
Issuance of common stock in private placement, net of expenses $2,719				7,991,256	8	21,180			21,188
Issuance of warrants							13,092		13,092
Issuance of common stock for services rendered				25,000		106			106
Stock-based compensation for employees						2,777			2,777
Issuance of common stock due to exercise of stock options				5,845		25			25
Issuance of common stock due to exercise of stock warrants				2,806					
Net loss								(17,857)	(17,857)
Balance at December 31, 2006				15,272,899	15	44,668	15,071	(33,221)	26,533
Issuance of common stock in private placement, net of expenses $1,909				5,910,049	6	23,532			23,538
Issuance of warrants							5,433		5,433

Stock-based compensation for employees			1,318			1,318
Stock-based compensation for non-employee			120			120
Issuance of common stock for stock options	46,016		36			36
Issuance of restricted stock	70,000					
Net Loss					(26,608)	(26,608)
Balance at December 31, 2007	21,298,964	21	69,674	20,504	(59,829)	30,370

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

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ZIOPHARM Oncology, Inc. ***(a development stage enterprise)***

STATEMENTS OF CHANGES IN PREFERRED STOCK

AND STOCKHOLDERS EQUITY (DEFICIT) (Cont.)

For the Period September 9, 2003 (date of inception) to December 31, 2013

(in thousands, except share and per share data)

	Preferred Stock and Warrants		Stockholders Equity (Deficit)					
	Series A Preferred Stock Shares	Series A Preferred Stock Amount	Warrants to Purchase Series A Preferred Stock Warrants	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital Common Stock	Additional Paid-in Capital Warrants	Deficit Accumulated During the Development Stage	Total Stockholders Equity/ (Deficit)
Stock-based compensation						1,600			1,600
Issuance of restricted common stock				586,500	1	(1)			
Forfeiture of unvested restricted common stock				(25,000)					
Other						1		(1)	
Net loss								(25,231)	(25,231)
Balance at December 31, 2008				21,860,464	22	71,274	20,504	(85,061)	6,739
Cumulative effect of a change in accounting principle January 1, 2009 reclassification of warrants to warrant liabilities							(1,638)	1,566	(72)
Stock-based compensation						2,181			2,181
Forfeiture of unvested restricted common stock				(69,500)					
Issuance of common stock and warrants in a private placement, net of expenses $465				2,772,337	3	385	4,207		4,595
				15,484,000	15	22,323			22,338

Issuance of common stock and warrants in a registered direct offering, net of commission and expenses of $2,802 and warrants of $22,860						
Exercise of warrants to purchase common stock	136,986		279			279
Exercise of employee stock options	102,564		73			73
Issuance of restricted common stock	1,400,500	2	(2)			
Repurchase of shares of restricted common stock	(103,823)		(380)			(380)
Net loss					(7,649)	(7,649)
Balance at December 31, 2009	41,583,528	42	96,133	23,073	(91,144)	28,104

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

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ZIOPHARM Oncology, Inc. ***(a development stage enterprise)***

STATEMENTS OF CHANGES IN PREFERRED STOCK

AND STOCKHOLDERS EQUITY (DEFICIT) (Cont.)

For the Period September 9, 2003 (date of inception) to December 31, 2013

(in thousands, except share and per share data)

	Preferred Stock and Warrants		Stockholders Equity (Deficit)					
	Series A Preferred Stock Shares	Series A Preferred Stock Amount	Warrants to Purchase Series A Preferred Stock Warrants	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital Common Stock	Additional Paid-in Capital Warrants	Deficit Accumulated During the Development Stage	Total Stockholders Equity/ (Deficit)
Stock-based compensation						3,637			3,637
Issuance of common stock in a registered direct offering, net of commission and expenses of $2,203				7,000,000	7	32,797			32,804
Exercise of warrants to purchase common stock				39,225		360	(239)		121
Exercise of employee stock options				196,167		225			225
Issuance of restricted common stock				115,000					
Repurchase of shares of restricted common stock				(416,108)	(1)	(1,667)			(1,668)
Cancelled restricted stock				(51,250)					
Expired warrants						45	(45)		
Net loss								(32,670)	(32,670)
Balance at December 31, 2010				48,466,562	48	131,530	22,789	(123,814)	30,553
Stock-based compensation						2,759			2,759

Issuance of common stock in a securities offering, net of commission and expenses of $245	11,040,000	11	59,795			59,806
Issuance of common stock in a collaboration agreement net of commission and expenses of $86	6,063,161	6	28,852			28,858
Exercise of warrants to purchase common stock	2,377,571	2	21,766	(9,067)		12,701
Exercise of employee stock options	479,666	1	980			981
Exercise of non-employee stock options	6,904					
Issuance of restricted common stock	848,406	1	(1)			
Repurchase of shares of restricted common stock	(59,559)		(273)			(273)
Cancelled restricted stock	(16,667)					
Expired warrants			1,111	(1,111)		
Net loss					(63,778)	(63,778)
Balance at December 31, 2011	69,206,044	69	246,519	12,611	(187,592)	71,607

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

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ZIOPHARM Oncology, Inc. ***(a development stage enterprise)***

STATEMENTS OF CHANGES IN PREFERRED STOCK

AND STOCKHOLDERS EQUITY (DEFICIT) (Cont.)

For the Period September 9, 2003 (date of inception) to December 31, 2013

(in thousands, except share and per share data)

	Preferred Stock and Warrants		Stockholders Equity (Deficit)					
	Series A Preferred Stock Shares	Amount	Warrants to Purchase Series A Preferred Stock Warrants	Common Stock Shares	Amount	Additional Paid-in Capital Common Stock	Additional Paid-in Capital Warrants	Deficit Accumulated During the Development Stage	Total Stockholders Equity/ (Deficit)
Stock-based compensation						4,880			4,880
Issuance of common stock in a securities offering, net of commission and expenses of $3,426				10,114,401	11	49,159			49,170
Exercise of warrants to purchase common stock				259,660		1,011	(269)		742
Exercise of employee stock options				8,300		30			30
Issuance of restricted common stock				258,032					
Repurchase of shares of restricted common stock				(123,153)		(546)			(546)
Cancelled restricted stock				(123,370)					
Expired warrants						5,433	(5,433)		
Issuance of common stock in a collaboration agreement				3,636,926	3	18,691			18,694
Net Loss								(96,132)	(96,132)

Balance at December 31, 2012	$	$	83,236,840	$ 83	$ 325,177	$ 6,909	$ (283,724)	$ 48,445

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

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ZIOPHARM Oncology, Inc. ***(a development stage enterprise)***

STATEMENTS OF CHANGES IN PREFERRED STOCK

AND STOCKHOLDERS EQUITY (DEFICIT) (Cont.)

For the Period September 9, 2003 (date of inception) to December 31, 2013

(in thousands, except share and per share data)

	Series A Preferred Stock Shares	Series A Preferred Stock Amount	Purchase Warrants	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital Common Stock	Additional Paid-in Capital Warrants	Deficit Accumulated During the Development Stage	Total Stockholders Equity/ (Deficit)
Stock-based compensation						3,507			3,507
Issuance of common stock, net of commission and expenses of $3,678				16,445,000	16	53,864			53,880
Exercise of warrants to purchase common stock				112,808		396	(196)		200
Exercise of employee stock options				570,168	1	955			956
Issuance of restricted common stock				75,272					
Repurchase of shares of restricted common stock				(116,723)		(498)			(498)
Cancelled of restricted stock				(163,747)					
Expired warrants						3,110	(3,110)		
Net Loss								(57,107)	(57,107)
Balance at December 31, 2013	$	$		100,159,618	$ 100	$ 386,511	$ 3,603	$ (340,831)	$ 49,383

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

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ZIOPHARM Oncology, Inc. ***(a development stage enterprise)***

STATEMENTS OF CASH FLOWS

(in thousands)

	For the Year Ended December 31,			Period from September 9, 2003 (date of inception) through December 31, 2013
	2013	2012	2011	
Cash flows from operating activities:				
Net loss	$ (57,107)	$ (96,132)	$ (63,778)	$ (340,831)
Adjustments to reconcile net loss to net cash used in operating activities:				
Depreciation and amortization	738	658	268	3,313
Stock-based compensation	3,507	4,880	2,759	23,688
Change in fair value of warrants	(1,185)	(6,050)	(7,583)	(11,956)
Loss on disposal of fixed assets	585	48		641
Common stock issued in exchange for in-process research and development		18,694	17,457	36,151
Change in operating assets and liabilities:				
(Increase) decrease in:				
Receivables	(87)	21	(79)	(145)
Prepaid expenses and other current assets	4,964	(5,599)	(889)	(1,948)
Other noncurrent assets	473	(230)	(407)	(528)
Deposits	4	(43)	(4)	(128)
Increase (decrease) in:				
Accounts payable	(1,087)	(218)	696	422
Accrued expenses	(10,159)	5,695	8,283	6,357
Deferred revenue	(800)	(800)	4,333	2,733
Deferred rent	625	244	109	1,063
Other noncurrent liabilities	20			20
Net cash used in operating activities	(59,509)	(78,832)	(38,835)	(281,148)
Cash flows from investing activities:				
Purchases of property and equipment	(132)	(1,559)	(1,156)	(4,758)
Proceeds from sale of property and equipment	1			2
Net cash used in investing activities	(131)	(1,559)	(1,156)	(4,756)
Cash flows from financing activities:				
Stockholders capital contribution				500
Proceeds from exercise of stock options	956	30	980	2,329

Payments to employees for repurchase of restricted common stock	(498)	(546)	(274)	(3,364)
Proceeds from exercise of warrants	200	330	12,399	13,278
Proceeds from issuance of common stock and warrants, net	53,880	49,170	71,207	324,605
Proceeds from issuance of preferred stock, net				16,760
Net cash provided by financing activities	54,538	48,984	84,312	354,108
Net increase (decrease) in cash and cash equivalents	(5,102)	(31,407)	44,321	68,204
Cash and cash equivalents, beginning of period	73,306	104,713	60,392	
Cash and cash equivalents, end of period	$ 68,204	$ 73,306	$ 104,713	$ 68,204
Supplementary disclosure of cash flow information:				
Cash paid for interest	$	$	$	$
Cash paid for income taxes	$	$	$	$
Supplementary disclosure of noncash investing and financing activities:				
Warrants issued to placement agents and investors	$	$	$	$ 47,276
Preferred stock conversion to common stock	$	$	$	$ 16,760
Exercise of equity-classified warrants to common shares	$ 196	$ 269	$ 9,067	$ 9,789
Exercise of liability-classified warrants to common shares	$	$ 412	$ 303	$ 764

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

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

1. Organization

ZIOPHARM Oncology, Inc., which we refer to as ZIOPHARM or the Company , is a biopharmaceutical company that seeks to acquire, develop and commercialize, on its own or with commercial partners, a diverse portfolio of cancer therapies that can address unmet medical needs through synthetic biology.

The Company s operations to date have consisted primarily of raising capital and conducting research and development. Accordingly, the Company is considered to be in the development stage at December 31, 2013. The Company s fiscal year ends on December 31.

The Company has operated at a loss since its inception in 2003 and has minimal revenues. The Company anticipates that losses will continue for the foreseeable future. At December 31, 2013, the Company s accumulated deficit was approximately $340.8 million. Based upon our current plans, we anticipate that our cash resources will be sufficient to fund our operations into the second quarter of 2015. The Company s ability to continue operations after its current cash resources are exhausted depends on its ability to obtain additional financing or to achieve profitable operations, as to which no assurances can be given. Cash requirements may vary materially from those now planned because of changes in the Company s focus and direction of its research and development programs, competitive and technical advances, patent developments, regulatory changes or other developments. Additional financing will be required to continue operations after the Company exhausts its current cash resources and to continue its long-term plans for clinical trials and new product development. There can be no assurance that any such financing can be obtained by the Company, or if obtained, what the terms thereof may be, or that any amount that the Company is able to raise will be adequate to support the Company s working capital requirements until it achieves profitable operations.

2. Financings

On October 23, 2013, the Company entered into an underwriting agreement with J. P. Morgan Securities LLC, as representative of the several underwriters named therein, relating to the issuance and sale of 14,300,000 shares of our common stock. The price to the public in the offering was $3.50 per share, and the underwriters agreed to purchase the shares from the Company pursuant to the underwriting agreement at a purchase price of $3.29 per share. Under the terms of the underwriting agreement, the Company also granted the underwriters an option, exercisable for 30 days, to purchase up to an additional 2,145,000 shares of common stock at a purchase price of $3.29 per share, and the underwriters elected to exercise such option in full. The offering was made pursuant to the Company s effective registration statement on Form S-3 (Registration Statement No. 333-177793) previously filed with the SEC, and a prospectus supplement thereunder. The underwriters purchased the 14,300,000 shares and the additional 2,145,000 shares on October 29, 2013. The net proceeds from the offering were approximately $53.9 million after deducting underwriting discounts and estimated offering expenses payable by the Company.

On January 20, 2012, the Company entered into an underwriting agreement with J. P. Morgan Securities LLC, as representative of the several underwriters named therein, relating to the issuance and sale of 9,650,000 shares of our common stock. The price to the public in the offering was $5.20 per share, and the underwriters agreed to purchase the shares from the Company pursuant to the underwriting agreement at a purchase price of $4.888 per share. Under the terms of the underwriting agreement, the Company also granted the underwriters an option, exercisable for 30 days, to

purchase up to an additional 1,447,500 shares of common stock at a purchase price of $4.888 per share. The offering was made pursuant to the Company s effective registration statement on Form S-3 (Registration Statement No. 333-177793) previously filed with the SEC, and a prospectus supplement thereunder. The underwriters purchased the 9,650,000 shares on January 25, 2012 and purchased an additional 464,401 shares on January 31, 2012 pursuant to the partial exercise of their option to purchase additional shares, resulting in our issuing a total of 10,114,401 shares. The net proceeds from the offering were approximately $49.2 million after deducting underwriting discounts and estimated offering expenses payable by the Company.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

2. Financings (Continued)

On February 3, 2011, the Company entered into an underwriting agreement with Barclays Capital Inc., or Barclays, relating to the issuance and sale of 9,600,000 shares of the Company s common stock in a public offering. The price to the public in the offering was $5.75 per share, and Barclays, as the sole underwriter for the offering, agreed to purchase the shares from the Company pursuant to the underwriting agreement at a purchase price of $5.425 per share. Under the terms of the underwriting agreement, the Company also granted Barclays an option, exercisable for 30 days, to purchase up to an additional 1,440,000 shares of the Company s common stock at a purchase price of $5.425 per share. On February 8, 2011, the transactions contemplated by the underwriting agreement were completed. In connection with the closing, Barclays exercised in full its option to purchase the additional 1,440,000 shares, resulting in the Company issuing a total of 11,040,000 shares at the closing. The net proceeds from the offering were approximately $59.8 million after deducting underwriting discounts and offering expenses.

On January 6, 2011, and in conjunction with the Company s execution and delivery of the Channel Agreement with Intrexon Corporation, or Intrexon, the Company entered into a Stock Purchase Agreement and Registration Rights Agreement with Intrexon. On January 12, 2011, and pursuant to that Stock Purchase Agreement, Intrexon purchased 2,426,235 shares of the Company s common stock in a private placement for a total purchase price of $11.6 million, or $4.80 per share. The Company simultaneously issued to Intrexon an additional 3,636,926 shares of its common stock for a cash purchase price equal to the $0.001 par value of such shares, which price was deemed paid in partial consideration for the execution and delivery of the Channel Agreement. This resulted in a non-cash expense of approximately $17.5 million for the in process research and development. Under the terms of the Stock Purchase Agreement, the Company agreed to issue to Intrexon an additional 3,636,926 shares of its common stock under certain conditions upon dosing of the first patient in a ZIOPHARM-conducted Phase 2 clinical trial in the Unites States, or similar study as the parties may agree in a country other than the United States, of a product candidate that is created, produced, developed or identified directly or indirectly by us during the term of the Channel Agreement and that, subject to certain exceptions, involves DNA administered to humans for expression of anti-cancer effectors for the purpose of treatment or prophylaxis of cancer. These shares were issued on November 7, 2012 (See Note 11 to the financial statements, Preferred Stock and Stockholders Equity), and when issued, the purchase price for such shares was equal to the $0.001 par value of such shares, which price was deemed paid in partial consideration for the execution and delivery of the Channel Agreement, in accordance with the terms of the Stock Purchase Agreement. Pursuant to the Registration Rights Agreement, the Company has filed a registration statement with the SEC registering the resale of the shares that we have issued or may issue to Intrexon under the Stock Purchase Agreement.

Also under the Stock Purchase Agreement, if requested by the Company and subject to certain conditions, restrictions and limitations, Intrexon has agreed to purchase the Company s securities in conjunction with qualified securities offerings that are conducted by the Company while the Channel Agreement remains in effect. In conjunction with a qualified offering, Intrexon has committed to purchase up to 19.99% of the securities offered and sold therein (exclusive of Intrexon s purchase) if requested to do so by the Company. Intrexon will not be obligated to purchase securities in a qualified securities offering unless the Company is then in substantial compliance with its obligations under the Channel Agreement and, with respect to a qualified offering that is completed following January 6, 2012, the Company confirms its intent that 40% of the offering s net proceeds shall have been spent, or in the next year will

be spent, by the Company under the Channel Agreement. In the case of a qualified offering that is completed after January 6, 2013, Intrexon s purchase commitment was limited to an amount equal to one-half of the proceeds spent or to be spent by the Company under the Channel Agreement. Intrexon s aggregate purchase commitment for all future qualified offerings is capped at $50.0 million. The Company and Intrexon subsequently amended the Stock Purchase Agreement to clarify that gross proceeds from the sale of Company securities to Intrexon in a qualified offering

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

2. Financings (Continued)

will apply against Intrexon s $50.0 million purchase commitment regardless of whether Intrexon participates voluntarily or at the request of the Company. As a result of Intrexon s purchase of securities in our February 2012 and October 2013 public offerings, the remaining maximum amount of Intrexon s equity purchase commitment is approximately $19.0 million.

On May 27, 2010, the Company entered into an underwriting agreement with Jefferies & Company, Inc. (the Representative) relating to the issuance and sale of 7,000,000 shares of the Company s common stock, par value $0.001 per share. The Representative, on behalf of itself and JMP Securities LLC, as underwriters for the offering, purchased 7,000,000 shares from the Company pursuant to the underwriting agreement and offered the shares to the public at a price of $5.00, and to certain dealers at that price less a concession not in excess of $0.18 per share of common stock. The net proceeds to the Company from this offering were $32.8 million, after deducting underwriting discounts, commissions and other offering expenses of $2.2 million. The offering was completed on June 2, 2010. Under the terms of the underwriting agreement, the Company granted the Representative an option, exercisable for 30 days, to purchase up to an additional 1,050,000 shares of common stock to cover over-allotments, if any. The overallotment expired on July 2, 2010, without being exercised.

On December 4, 2009, the Company entered into an underwriting agreement in which JMP Securities LLC and Rodman & Renshaw, LLC agreed to serve as co-lead managers (together, the Underwriters) in connection with a public offering and sale by the Company of 15,484,000 units at a price to the public of $3.10 per unit for gross proceeds of $48.0 million. The Company paid $2.8 million in commissions and offering expenses and expects to use the remaining net proceeds of $45.2 million for general corporate purposes, which include ongoing research and development activities. Each unit sold in the offering consisted of one share of our common stock and an investor warrant to purchase 0.5 of a share of common stock. The shares of common stock and investor warrants were immediately separable. The closing of the transaction occurred on December 9, 2009.

In connection with a 2009 underwritten public offering, the Company issued warrants to purchase an aggregate of 8,206,520 shares of common stock (including the investor warrants and 464,520 warrants issued to the Underwriters). The investor warrants are exercisable immediately and the underwriter warrants exercisable six months after the date of issuance. The warrants have an exercise price of $4.02 per share and have a five year term. The fair value of the warrants was estimated at $22.9 million using a Black-Scholes model with the following assumptions: expected volatility of 105%, risk free interest rate of 2.14%, expected life of five years and no dividends.

The Company assessed whether the warrants require accounting as derivatives. The Company determined that the warrants were not indexed to the Company s own stock in accordance with Financial Accounting Standards Board, or FASB, Accounting Standards Codification, or ASC, Topic 815, *Derivatives and Hedging*. As such, the Company has concluded the warrants did not meet the scope exception for determining whether the instruments require accounting as derivatives and should be classified as liabilities (see Note 9 to the financial statements, Warrants).

On September 9, 2009, the Company entered into a securities purchase agreement with certain investors pursuant to which it sold a total of 2,772,337 units (the 2009 Private Placement), each unit consisting of one share of common stock and a warrant to purchase one share of common stock for a purchase price of $1.825 per unit. The closing of the transaction occurred on September 15, 2009. In connection with the 2009 Private Placement, the Company raised approximately $5.1 million in gross proceeds. After paying $455 thousand in placement agent fees and offering expenses, the net proceeds were $4.6 million.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

2. Financings (Continued)

In connection with a 2009 private placement, the Company issued warrants to purchase an aggregate of 2,910,954 shares of common stock (including 138,617 warrants issued to the placement agents) which are exercisable immediately. The warrants have an exercise price of $2.04 per share and have a five year term. The fair value of the warrants was estimated at $4.2 million using a Black-Scholes model with the following assumptions: expected volatility of 105%, risk free interest rate of 2.41%, expected life of five years and no dividends. The fair value of the warrants was recorded in the equity section of the balance sheet.

The Company assessed whether the warrants require accounting as derivatives. The Company determined that the warrants were indexed to the Company s own stock in accordance with FASB ASC Topic 815, *Derivatives and Hedging*. As such, the Company has concluded the warrants meet the scope exception for determining whether the instruments require accounting as derivatives and should be classified in stockholders equity.

In connection with the 2009 Private Placement, the Company entered into a registration rights agreement with each of the investors. The registration rights agreement requires that the Company file a resale registration statement covering all of the shares issued in the 2009 Private Placement and the shares issuable upon exercise of the warrants issued in the 2009 Private Placement, up to the maximum number of shares able to be registered pursuant to applicable Securities and Exchange Commission (SEC) regulations, within 30 days of the closing of the 2009 Private Placement. The Company filed the registration statement with the SEC on September 28, 2009 (File No. 333-162160). Under the terms of the registration rights agreement, the Company is obligated to maintain the effectiveness of the resale registration statement until all securities therein are sold or are otherwise can be sold pursuant to Rule 144, without any restrictions. A cash penalty at the rate of 1% of the purchase price per month, capped at a maximum of 10% of the purchase price (or $506 thousand), will be triggered for any filing or effectiveness failures or if, at any time after six months following the closing of the 2009 Private Placement, the Company ceases to be current in periodic reports with the SEC.

In December 2006, the FASB issued an accounting standard, which addresses an issuer s accounting for registration payment arrangements. The accounting standard specifies that the contingent obligation to make future payments or otherwise transfer consideration under a registration payment arrangement, whether issued as a separate agreement or included as a provision of a financial instrument or other agreement, should be separately recognized and measured in accordance with FASB guidance in Accounting for Contingencies. The accounting standard further clarifies that a financial instrument subject to a registration payment arrangement should be accounted for in accordance with US GAAP without regard to the contingent obligation to transfer consideration pursuant to the registration payment arrangement. The Company applied the recognition and measurement provisions of the accounting standard to the registration rights associated with the registration rights agreement. As result, the Company believes that the contingent obligation to make future payments is not probable and as such has recorded no liability associated with these registration rights.

On February 23, 2007, pursuant to subscription agreements between the Company and certain institutional and other accredited investors, the Company completed the sale of an aggregate of 5,910,049 shares of the Company s common

stock at a price of $5.225 per share in a private placement (the 2007 Offering). In addition to these shares sold in the 2007 Offering, the Company also issued to each investor a five-year warrant to purchase, at an exercise price of $5.75 per share, an additional number of shares of common stock equal to 20 percent of the shares purchased by such investor in the 2007 Offering. In the aggregate, these warrants entitle investors to purchase an additional 1,182,015 shares of common stock. The Company estimated the fair value of these warrants at $4.7 million using the Black-Scholes model, using an assumed risk-free rate of 4.71% and an expected life of 5 years, volatility of 93%, and a dividend yield of 0%. The total gross proceeds resulting from the 2007 Offering was approximately $30.9 million, before deducting selling commissions and expenses.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

2. Financings (Continued)

The Company assessed whether the warrants require accounting as derivatives. The Company determined that the warrants were indexed to the Company s own stock in accordance with ASC Topic 815, *Derivatives and Hedging*. As such, the Company has concluded the warrants meet the scope exception for determining whether the instruments require accounting as derivatives and should be classified in stockholders equity.

The Company engaged Paramount BioCapital, Inc. (Paramount), Oppenheimer & Co. Inc., and Griffin Securities, Inc. (together, the 2007 Placement Agents) as placement agents in connection with the 2007 Offering. In consideration for their services, the Company paid the 2007 Placement Agents aggregate cash commissions of $1.6 million (of which $1.0 million was paid to Paramount; see Note 7 to the financial statements, Related Party Transactions) and issued 5-year warrants to the 2007 Placement Agents and their designees to purchase an aggregate of 156,058 shares of the Company s common stock at an exercise price of $5.75 per share. In connection with the 2007 Offering, the Company also made cash payments of $222 thousand and issued 5-year warrants to purchase 21,244 shares of the Company s common stock, at an exercise price of $5.75 per share, to a financial consultant pursuant to the non-circumvention provision of a prior agency agreement. The Company estimated the fair value of these 177,302 warrants at $709 thousand using the Black-Scholes model, using an assumed risk-free rate of 4.71% and an expected life of 5 years, volatility of 93%, and a dividend yield of 0%.

The Company assessed whether the warrants require accounting as derivatives. The Company determined that the warrants were indexed to the Company s own stock in accordance with ASC Topic 815, *Derivatives and Hedging*. As such, the Company has concluded the warrants meet the scope exception for determining whether the instruments require accounting as derivatives and should be classified in stockholders equity.

Pursuant to the 2007 Offering, the Company agreed to use its best efforts to (i) file a registration statement covering the resale of the shares sold in the 2007 Offering and the common stock issuable upon exercise of the investor warrants and placement agent warrants issued in the 2007 Offering within 45 days following the closing date of the 2007 Offering, and (ii) use reasonable commercial efforts to cause the registration statement to be effective within 120 days after such final closing date.

With respect to each investor in the 2007 Offering, the Company also agreed to use reasonable commercial efforts to cause the registration statement to remain effective until the earliest of (i) the date on which the investor may sell all of the shares and shares issuable upon exercise of the warrants then held by the investor pursuant to then-Rule 144 of the Securities Act of 1933 without regard to volume restrictions; and (ii) such time as all of the securities held by the investor and registered under the registration statement have been sold pursuant to a registration statement, or in a transaction exempt from the registration and prospectus delivery requirements of the Securities Act of 1933 under Section 4(1) thereof so that all transfer restrictions and restrictive legends are removed upon the consummation of such sale. The 2007 Placement Agents have been afforded equivalent registration rights as the investors in the 2007 Offering with respect to the shares issuable upon exercise of the placement agent warrants. Effective January 1, 2007, the Company adopted a new accounting standard which requires that instruments subject to registration payments are accounted for without regard to the contingent obligation to make registration payments. As a result, the Company has

determined that no contingent loss exists based on its history of timely annual, quarterly and registration filings. The Company intends to continue the timely compliance with all SEC filing requirements, which will keep the Company current and the shares registered. On March 1, 2007, the Company filed a registration statement on Form S-3 with the Securities and Exchange Commission. The registration statement was declared effective on March 26, 2007, rendering the resale of the shares issued in the 2007 Offering registered under the Securities Exchange Act of 1933 and no penalty was recorded.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

2. Financings (Continued)

On May 3, 2006, pursuant to subscription agreements, the Company and certain institutional and other accredited investors, the Company completed the sale of an aggregate of 7,991,256 shares of the Company s common stock at a price of $4.63 per share in a private placement (the 2006 Offering). In addition to the shares, the Company also issued to each investor a five-year warrant to purchase, at an exercise price of $5.56 per share, an additional number of shares of common stock equal to 30 percent of the shares purchased by such investor in the 2006 Offering. In the aggregate, these Warrants entitle investors to purchase an additional 2,397,392 shares of common stock. The Company estimated the fair value of these warrants at $9.6 million using the Black-Scholes model, using an assumed risk-free rate of 5.01% and an expected life of 5 years, volatility of 100%, and a dividend yield of 0%. The total gross proceeds resulting from the 2006 Offering was approximately $37 million, before deducting selling commissions and expenses.

The Company assessed whether the warrants require accounting as derivatives. The Company determined that the warrants were both (1) indexed to the Company s own stock and (2) classified in stockholders equity in accordance with ASC Topic 815, *Derivatives and Hedging*. As such, the Company has concluded the warrants meet the scope exception for determining whether the instruments require accounting as derivatives and should be classified in stockholders equity.

The Company engaged Paramount BioCapital, Inc. and Griffin Securities, Inc. (together, the 2006 Placement Agents) as co-placement agents in connection with the 2006 Offering. In consideration for their services, the Company paid the 2006 Placement Agents and certain selected dealers engaged by the 2006 Placement Agents and their designees aggregate cash commissions of $2.6 million (of which $1.7 million was paid to Paramount; see Note 7 to the financial statements, Related Party Transactions) and issued 7-year warrants to the 2006 Placement Agents and their designees to purchase an aggregate of 799,126 shares of the Company s common stock (10 percent of the shares sold in the 2006 Offering) at an exercise price of $5.09 per share. The Company estimated the fair value of these warrants at $3.5 million using the Black-Scholes model, using an assumed risk-free rate of 5.01% and an expected life of 7 years, volatility of 100% and a dividend yield of 0%. The Company made reimbursements of $100 thousand to the 2006 Placement Agents for their expenses incurred in connection with the 2006 Offering.

Pursuant to the 2006 Offering, the Company agreed to use its best efforts to (i) file a registration statement covering the resale of the shares issued in the 2006 Offering and the common stock issuable upon exercise of the warrants issued in the 2006 Offering (including the placement agent warrants) within 30 days following the closing date of the 2006 Offering, and (ii) use its reasonable commercial efforts to cause the registration statement to be effective within 120 days after such final closing date.

With respect to each investor in the 2006 Offering, the Company also agreed to use its reasonable commercial efforts to cause the registration statement to remain effective until the earliest of (i) the date on which the investor may sell all of the shares issued in the 2006 Offering and shares issuable upon exercise of the warrants then held by the investor pursuant to then-Rule 144 of the Securities Act of 1933 without regard to volume restrictions; and (ii) such time as all of the securities held by the investor and registered under the registration statement have been sold pursuant to a registration statement, or in a transaction exempt from the registration and prospectus delivery requirements of the

Securities Act of 1933 under Section 4(1) thereof so that all transfer restrictions and restrictive legends are removed upon the consummation of such sale. The 2006 Placement Agents have been afforded equivalent registration rights as the investors in the 2006 Offering with respect to the shares issuable upon exercise of the placement agent warrants. Warrants issued in the 2006 Offering are classified as equity. On May 19, 2006, the Company filed a registration statement on Form S-3 with the Securities and Exchange Commission. The registration statement was declared effective on May 30, 2006,

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

2. Financings (Continued)

rendering the resale of the shares issued in the 2006 Offering registered under the Securities Exchange Act of 1933 and no penalties were recorded.

On August, 3, 2005, the Company entered into an Agreement and Plan of Merger dated as of August 3, 2005 (the Merger Agreement) with EasyWeb, Inc., a Delaware corporation (EasyWeb), and ZIO Acquisition Corp., a Delaware corporation and wholly-owned subsidiary of EasyWeb (ZIO Acquisition). EasyWeb was a company that was incorporated in September 1998 and had been in the business of designing, marketing, selling and maintaining customized and template turnkey sites on the Internet that are hosted by third parties. At the time of the Merger (as defined below), however, EasyWeb had no operating business and had limited assets and liabilities. Pursuant to the Merger Agreement, ZIO Acquisition merged with and into ZIOPHARM, with ZIOPHARM remaining as the surviving company and a wholly-owned subsidiary of EasyWeb (the Merger). In connection with the Merger, which was effective as of September 13, 2005, ZIO Acquisition ceased to exist and the surviving company changed its corporate name to ZIOPHARM, Inc. Based upon an Exchange Ratio, as defined in the Merger Agreement, in exchange for all of their shares of capital stock in ZIOPHARM, the ZIOPHARM stockholders received a number of shares of common stock of EasyWeb such that, upon completion of the Merger, the then-current ZIOPHARM stockholders held approximately 96.8% of the outstanding shares of common stock of EasyWeb on a fully-diluted basis. Upon completion of the Merger, EasyWeb ceased all of its remaining operations and adopted and continued implementing the business plan of ZIOPHARM. Further, effective upon the Merger, the then current officers and directors of EasyWeb resigned, and the then current officers and directors of ZIOPHARM were appointed officers and directors of EasyWeb. In conjunction with the Merger, ZIOPHARM made payments of approximately $425,000 to certain affiliates of EasyWeb in the third quarter of 2005. Subsequently, on September 14, 2005, ZIOPHARM merged into EasyWeb, and EasyWeb changed its name to ZIOPHARM Oncology, Inc.

Although EasyWeb was the legal acquirer in the transaction, ZIOPHARM became the registrant with the Securities and Exchange Commission. Under generally accepted accounting principles, the transaction was accounted for as a reverse acquisition, whereby ZIOPHARM was considered the acquirer of EasyWeb for financial reporting purposes because ZIOPHARM s stockholders controlled more than 50% of the post-transaction combined entity, the management and the board were that of ZIOPHARM after the transaction, EasyWeb had no operating activity and limited assets and liabilities as of the transaction date, and the continuing operations of the entity are those of ZIOPHARM.

Accordingly, the equity of EasyWeb was adjusted to reflect a recapitalization of the stock and the equity of ZIOPHARM was adjusted to reflect a financing transaction with the proceeds equal to the net asset value of EasyWeb immediately prior to the Merger. The historical financial statements of ZIOPHARM became the historical financial statements of the Company. The historical stockholders equity was retroactively restated to adjust for the exchange of shares pursuant to the Merger Agreement. All share and per share information included in the accompanying financial statements and notes give effect to the exchange, except as otherwise stated.

On June 6, 2005, the Company completed an offering (the 2005 Offering) of Series A Convertible Preferred Stock (Series A Preferred Stock). The Company issued 4,197,946 shares at $4.31 for gross proceeds of approximately $18.1 million. In connection with the 2005 Offering, the Company compensated Paramount, placement agent for the 2005 Offering, or its affiliates for its services through the payment of (a) cash commissions equal to 7% of the gross proceeds from the sale of the shares of Series A Preferred Stock, and (b) placement warrants to acquire 419,794 shares of Series A Preferred Stock (the Series A Stock Warrants), exercisable for a period of 7 years from the closing date at a per-share exercise price equal to 110% of the price

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

2. Financings (Continued)

per share sold in the 2005 Offering. These commissions are also payable on additional sales by the Company of securities (other than in a public offering) to investors introduced to the Company by Paramount during the twelve (12) month period subsequent to the final closing of the Offering. The Company also paid Paramount an expense allowance of $50 thousand to reimburse Paramount for its out-of-pocket expenses. Also, for a period of 36 months from the final Closing, Paramount has the right of first refusal to act as the placement agent for any private sale of the Company s securities. On September 13, 2005, the Series A Preferred Stock was converted to 4,197,946 of the Company s common stock. Lastly, the Company has agreed to indemnify Paramount against certain liabilities, including liabilities under the Securities Act (see Note 7 to the financial statements, Related Party Transactions).

The Company valued the Series A Stock Warrants using the Black-Scholes model and recorded a charge of $1.7 million against additional paid-in capital. The Company has estimated the fair value of such warrants using the Black-Scholes model, using an assumed risk-free rate of 3.93% and expected life of 7 years, volatility of 134% and dividend yield of 0%. The net proceeds from the 2005 Offering were used for research and development, licensing fees and expenses, and for working capital and general corporate purposes.

3. Summary of Significant Accounting Policies

Basis of Presentation

The accompanying financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (U.S. GAAP).

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America 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. Although the Company regularly assesses these estimates, actual results could differ from those estimates. Changes in estimates are recorded in the period in which they become known.

The Company s most significant estimates and judgments used in the preparation of our financial statements are:

Clinical trial expenses;

Fair value measurements for stock based compensation and warrants; and

Income taxes.

Subsequent Events

The Company evaluated all events and transactions that occurred after the balance sheet date through the date of this filing. During this period, the Company did not identify any material events that require accounting or disclosure in these financial statements.

Cash and Cash Equivalents

Cash equivalents consist primarily of demand deposit accounts and deposits in short-term U.S. treasury money market mutual funds. Cash equivalents are stated at cost, which approximates fair market value.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

3. Summary of Significant Accounting Policies (Continued)

Concentrations of Credit Risk

Financial instruments which potentially subject the Company to concentrations of credit risk consist principally of cash and cash equivalents. The Company maintains cash accounts in commercial banks, which may, at times, exceed federally insured limits. The Company has not experienced any losses in such accounts. The Company believes it is not exposed to any significant credit risk on cash and cash equivalents.

Property and Equipment

Property and equipment are recorded at cost. Expenditures for maintenance and repairs are charged to expense while the costs of significant improvements are capitalized. Depreciation is provided using the straight-line method over the following estimated useful lives of the related assets, which is between three and five years. Upon retirement or sale, the cost of the assets disposed of and the related accumulated depreciation are eliminated from the balance sheets and related gains or losses are reflected in the statements of operations.

Restricted Cash

Current assets include $200 thousand that is restricted for the Company s former line of credit. Other non-current assets include cash of $409 thousand that is restricted as collateral for the Company s facility leases and subleases and $103 thousand that is restricted as collateral for a line of credit.

Long-Lived Assets

The Company reviews the carrying values of its long-lived assets for possible impairment whenever events or changes in circumstances indicate that the carrying amounts of the assets may not be recoverable. Any long-lived assets held for disposal are reported at the lower of their carrying amounts or fair values less costs to sell.

Warrants

The Company applies the accounting standard which provides guidance in assessing whether an equity-based financial instrument is indexed to an entity s own stock for purposes of determining whether a financial instrument should be treated as a derivative. In applying the methodology the Company concluded that certain warrants issued by the Company have terms that do not meet the criteria to be considered indexed to the Company s own stock and therefore are classified as liabilities in the Company s balance sheet. The liability classified warrants are subject to re-measurement at each balance sheet date and any change in fair value is recognized as a component of Other income, net in the accompanying Statement of Operations. Fair value is measured using the binomial valuation model. In December 2011, the Company switched from the Black-Scholes valuation model to the binomial valuation model as it provides a better evaluation of the fair market value of the Company s liability-classified warrants.

Fair Value Measurements

We have certain financial assets and liabilities recorded at fair value which have been classified as Level 1, 2 or 3 within the fair value hierarchy as described in the accounting standards for fair value measurements.

Level 1 Quoted prices in active markets for identical assets or liabilities.

Level 2 Inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

3. Summary of Significant Accounting Policies (Continued)

Level 3 Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

Assets and liabilities measured at fair value on a recurring basis as of December 31, 2013 and 2012 are as follows:

($ in thousands)		Fair Value Measurements at Reporting Date Using		
Description	Balance as of December 31, 2013	Quoted Prices in Active Markets for Identical Assets/Liabilities (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Cash equivalents	$ 66,794	$ 66,794	$	$
Warrant liability	$ 11,776	$	$ 11,776	$

($ in thousands)		Fair Value Measurements at Reporting Date Using		
Description	Balance as of December 31, 2012	Quoted Prices in Active Markets for Identical Assets/Liabilities (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Cash equivalents	$ 72,002	$ 72,002	$	$
Warrant liability	$ 12,962	$	$ 12,962	$

The cash equivalents consist primarily of short term U.S. treasury money market mutual funds which are actively traded. The warrants were valued using a binomial valuation model. See Note 9 to the financial statements, Warrants, for additional disclosure on the valuation methodology and significant assumptions.

Revenue Recognition

The Company receives revenue from a collaboration agreement (see Note 8 to the financial statements, Commitments and Contingencies). Collaboration arrangements typically include payments for one or more of the following: non-refundable, upfront license fees, funding of research and development efforts, milestone payments if specified

objectives are achieved and/or profit-sharing or royalties on product sales. Arrangements containing multiple elements are divided into separate units of accounting if certain criteria are met, including whether the delivered element has stand-alone value to the collaborative partner. The consideration received is then allocated among the separate units based on their respective fair values and the applicable revenue recognition criteria are applied to each of the separate units.

Revenue from non-refundable, upfront research and development fees is reported as research and development revenue and is recognized on a straight-line basis over the contracted or estimated period of performance, which is typically the development term. Research and development funding is earned over the period of effort.

Milestone payments are recognized as research and development revenue upon achievement of the milestone only if (1) the milestone payment is non-refundable, (2) substantive effort is involved in achieving the milestone and (3) the amount of the milestone is reasonable in relation to the effort expended or the risk associated with achievement of the milestone. If any of these conditions are not met, the milestone payment is deferred and recognized as revenue over the estimated remaining period of performance under the contract as the Company completes its performance obligations.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

3. Summary of Significant Accounting Policies (Continued)

Research and Development Costs

Research and development expenditures are charged to the statement of operations as incurred. Such costs include proprietary research and development activities, purchased research and development, and expenses associated with research and development contracts, whether performed by the Company or contracted with independent third parties.

Income Taxes

Income taxes are accounted for under the liability method. Deferred tax assets and liabilities are recognized for the estimated future tax consequences of temporary differences between the financial statement carrying amounts and their respective tax bases. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the year in which the temporary differences are expected to be recovered or settled. The Company evaluates the realizability of our deferred tax assets and establishes a valuation allowance when it is more likely than not that all or a portion of deferred tax assets will not be realized.

The Company accounts for uncertain tax positions using a more-likely-than-not threshold for recognizing and resolving uncertain tax positions. The evaluation of uncertain tax positions is based on factors including, but not limited to, changes in tax law, the measurement of tax positions taken or expected to be taken in tax returns, the effective settlement of matters subject to audit, new audit activity and changes in facts or circumstances related to a tax position. The Company evaluates this tax position on an annual basis. The Company also accrues for potential interest and penalties, related to unrecognized tax benefits in income tax expense (see Note 10 to the financial statements, Income Taxes).

Accounting for Stock-Based Compensation

Stock-based compensation cost is measured at the grant date, based on the estimated fair value of the award, and is recognized as expense over the employee s requisite service period. Stock-based compensation expense is based on the number of awards ultimately expected to vest and is therefore reduced for an estimate of the awards that are expected to be forfeited prior to vesting. Consistent with prior years, the Company uses the Black-Scholes option pricing model which requires estimates of the expected term option holders will retain their options before exercising them and the estimated volatility of the Company s common stock price over the expected term.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

3. Summary of Significant Accounting Policies (Continued)

The Company recognizes the full impact of its share-based employee payment plans in the statements of operations for each of the years ended December 31, 2013, 2012, and 2011 and did not capitalize any such costs on the balance sheets. The Company recognized $2.3 million, $3.1 million, and $2.1 million of compensation expense related to vesting of employee stock options during the years ended December 31, 2013, 2012, and 2011, respectively. In the years ended December 31, 2013, 2012, and 2011, the Company recognized $1.2 million, $1.7 million, and $635 thousand of compensation expense, respectively, related to vesting of restricted stock (see Note 12 to the financial statements, Stock Option Plan). In the years ended December 31, 2013, 2012, and 2011, the Company recognized $3.5 million, $4.9 million, and $2.8 million of compensation expense, respectively, related to vesting of all employee and director awards. The following table presents share-based compensation expense included in the Company s Statements of Operations:

	Year ended December 31,		
(in thousands)	**2013**	**2012**	**2011**
Research and development	$ 792	$ 1,917	$ 890
General and administrative	2,715	2,963	1,869
Share based employee compensation expense before tax	3,507	4,880	2,759
Income tax benefit			
Net share based employee compensation expense	$ 3,507	$ 4,880	$ 2,759

Prior to the adoption of the current accounting standards in 2006, the Company previously accounted for stock-based awards to employees using the intrinsic value method and had elected the disclosure-only alternative. All stock-based awards to nonemployees were accounted for at their fair value. The Company had recorded the fair value of each stock option issued to non-employees as determined at the date of grant using the Black-Scholes option pricing model.

The following table illustrates the effect on net loss and earnings per share if the Company had applied the fair value recognition provisions of current accounting standards to stock-based awards from September 9, 2003 (date of inception) to December 31, 2005:

(in thousands, except per share data)	**September 9, 2003 (date of inception) to December 31, 2005**
Net loss:	

As reported	$	(15,364)
Stock-based compensation expense included in reported net loss		802
Stock-based compensation expense under the fair-value based method		(1,756)
Pro forma net loss	$	(16,318)
Basic and diluted net loss per share:		
As reported	$	(3.75)
Pro forma	$	(3.98)

The fair value of each stock option is estimated at the date of grant using the Black-Scholes option pricing model. The estimated weighted-average fair value of stock options granted to employees in 2013, 2012, and 2011 was approximately $2.51, $3.06, and $4.04 per share, respectively. Assumptions regarding volatility, expected term, dividend yield and risk-free interest rate are required for the Black-Scholes model. The volatility assumption is based on the Company s historical experience. The risk-free interest rate is based on a U.S. treasury note with a

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

3. Summary of Significant Accounting Policies (Continued)

maturity similar to the option award s expected life. The expected life represents the average period of time that options granted are expected to be outstanding. The Company calculated expected term using the simplified method described in SEC Staff Accounting Bulletin, or SAB, No. 107 and No. 110. The assumptions for volatility, expected life, dividend yield and risk-free interest rate are presented in the table below:

	2013	2012	2011
Weighted average risk-free interest rate	1.00 - 2.10%	0.79 - 1.13%	1.09 - 2.69%
Expected life in years	6	6	6
Expected volatility	83.40 - 95.96%	83.36 - 83.53%	83.26 - 87.29%
Expected dividend yield	0	0	0

Net Loss Per Share

Basic net loss per share is computed by dividing net loss by the weighted average number of common shares outstanding for the period. The Company s potential dilutive shares, which include outstanding common stock options, unvested restricted stock and warrants, have not been included in the computation of diluted net loss per share for any of the periods presented as the result would be antidilutive. Such potential common shares at December 31, 2013, 2012, and 2011 consist of the following:

	December 31,		
	2013	2012	2011
Stock options	6,747,303	7,147,303	5,138,486
Unvested restricted stock	352,865	733,739	950,906
Warrants	10,539,767	11,197,454	13,117,264
	17,639,935	19,078,496	19,206,656

New Accounting Pronouncements

In January 2013, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update, or ASU, No. 2013-01, *Balance Sheet (Topic 210): Clarifying the Scoping of Disclosures about Offsetting Assets and Liabilities* (ASU 2013-01) which clarifies the scope of ASU No. 2011-11 requiring an entity to disclose information about offsetting and related arrangements to enable users of its financial statements to understand the effect of those arrangements on its financial position. This ASU was effective for fiscal years beginning on or after January 1, 2013 and interim periods within those annual periods. The adoption of this standard did not have an impact on our financial position or results of operations.

In February 2013, the FASB issued ASU No. 2013-02, *Comprehensive Income (Topic 220): Reporting of Amounts Reclassified Out of Accumulated Other Comprehensive Income* (ASU 2013-02) which requires an entity to provide information about the amounts reclassified out of accumulated other comprehensive income by component. In addition, an entity is required to present, either on the face of the statement where net income is presented or in the notes, significant amounts reclassified out of accumulated other comprehensive income by the respective line items of net income but only if the amount reclassified is required under U.S. GAAP to be reclassified to net income in its entirety in the same reporting period. For other amounts that are not required under U.S. GAAP to be reclassified in their entirety to net income, an entity is required to cross-reference to other disclosures required under U.S. GAAP that provide additional detail about those amounts. This ASU was effective for reporting periods beginning after December 15, 2012 and did not have an impact on our financial position or results of operations.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

4. Restructuring

The Company underwent restructuring activities during the year ended December 31, 2013 which included a reduction in workforce and office space, resulting in sublease agreements in Boston and New York. As a result, the Company incurred restructuring charges of $1.7 million, $0.6 million was included in general and administrative expenses and $1.1 million was included in research and development expenses. The Company also incurred charges for exit and disposal activities from the Boston and New York sublease agreements which resulted in an aggregate loss of $0.8 million recorded in general and administrative expenses, and a loss on the disposal of fixed assets of $0.6 million, recorded in Other income in the Statement of Operations for the year ended December 31, 2013 and the period from inception (September 9, 2003) through December 31, 2013.

On October 17, 2013, the Company entered into a sublease agreement to lease 7,259 square feet in our New York office to a subtenant. The Company remains primarily liable to pay rent on the original lease. We recorded a loss on the sublease in the amount of $729 thousand for the year ended December 31, 2013, representing the remaining contractual obligation of $2.3 million, less $1.6 million in payments from our subtenant. We retired assets in this subleased area as a result of this sublease with a net book value of $392 thousand, and recorded a loss on disposal of fixed assets for the same amount for the year ended December 31, 2013.

On August 30, 2013, the Company entered into a sublease agreement to lease 5,249 square feet in our Boston office to a subtenant. In accordance with the sublease agreement, the subtenant provided the Company with a security deposit of $20 thousand, which is recorded in other non-current assets and other liabilities on the balance sheet for the year ended December 31, 2013. The Company remains primarily liable to pay rent on the original lease. We recorded a loss on the sublease in the amount of $42 thousand for the year ended December 31, 2013, representing the remaining contractual obligation of $367 thousand, less $325 thousand in payments from our subtenant. We retired assets in this subleased area as a result of this sublease with a net book value of $194 thousand, and recorded a loss on disposal of fixed assets for the same amount for the year ended December 31, 2013.

On July 16, 2012, the Company announced that it restructured its management team and closed its Germantown, MD office. As a result of this action, the Company recorded a restructuring charge, consisting primarily of severance, stock based compensation associated with stock option modifications (see Note 12 to the financial statements, Stock Option Plan) and health benefit continuation costs of approximately $1.3 million. These costs are included in general and administrative expense for the year ended December 31, 2012 and the period from inception (September 9, 2003) through December 31, 2013.

5. Property and Equipment, net

Property and equipment, net consist of the following:

(in thousands)	December 31, 2013	2012

Office and computer equipment	$ 1,076	$ 1,552
Software	884	856
Leasehold improvements	841	1,357
Manufacturing equipment	153	153
	2,954	3,918
Less: accumulated depreciation	(2,153)	(1,924)
Property and equipment, net	$ 801	$ 1,994

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

5. Property and Equipment, net (Continued)

Depreciation and amortization charged to the Statement of Operations for the years ended December 31, 2013, 2012, 2011 and from September 9, 2003 (date of inception) to December 31, 2013 (in thousands) was: $738, $658, $268, and $3,313, respectively.

6. Accrued Expenses

Accrued expenses consist of the following:

	December 31,	
(in thousands)	**2013**	**2012**
Professional services	$ 582	$ 835
Clinical consulting services	3,751	9,628
Preclinical services	513	411
Manufacturing services	547	3,217
Accrued vacation	227	452
Other consulting services	230	903
Payroll taxes and benefits	255	585
Severance		474
Employee compensation	252	11
Accrued expenses	$ 6,357	$ 16,516

7. Related Party Transactions

During 2005, the Company engaged Paramount to assist in placing shares of Series A Preferred Stock on a best efforts basis. Lindsay A. Rosenwald, M.D. is Chairman and Chief Executive Officer of Paramount. Dr. Rosenwald is also a managing member of Horizon BioMedical Ventures, LLC, or Horizon. On December 30, 2004, Horizon authorized the distribution of 2,428,911 (4,848,376 pre-Merger) shares of the Company s common stock (such shares, the Horizon Distributed Shares), in equal installments of 1,214,456 (2,424,188 pre-Merger) shares of common stock to Mibars, LLC, or Mibars, and to Dr. Rosenwald and his designees, which we refer to as the Designated Shares . The disposition of the Designated Shares will be subject to certain restrictions as agreed to among Dr. Rosenwald and Dr. Rosenwald s designees. Among other things, under certain circumstances set forth in pledge agreements between Dr. Rosenwald and his designees, Dr. Rosenwald has the right to re-acquire the Designated Shares from his designees. As a result of those rights, Dr. Rosenwald may be deemed to be an affiliate of the Company.

In connection with the December 22, 2004 Option Agreement with Southern Research Institute, or SRI, the Company entered into a Finders Agreement, dated December 23, 2004, with Paramount pursuant to which the Company has agreed to compensate Paramount, for services in connection with the Company s introduction to SRI through the payment of (a) a cash fee of $60 thousand and (b) warrants to purchase 62,621 (125,000 pre-Merger) shares of the Company s common stock at a price equal to $4.75 ($2.38 pre-Merger) per share. The Company has estimated the fair value of such warrants using the Black-Scholes model, using an assumed risk-free rate of 3.93%, and expected life of 7 years, volatility of 134% and dividend yield of 0%. In December 2004, the Company expensed the $60 thousand that was payable to Paramount and recognized compensation expense in the amount of $251 thousand for the issuance of the warrants. These warrants expired on December 23, 2011.

In connection with the Series A Preferred Stock Offering, the Company and Paramount entered into an Introduction Agreement in January 2005, pursuant to which the Company had agreed to compensate Paramount

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

7. Related Party Transactions (Continued)

for its services in connection with the Offering through the payment of (a) cash commissions equal to 7% of the gross proceeds from the sale of the shares of Series A Preferred Stock, and (b) placement warrants to acquire a number of shares of Series A Preferred Stock equal to 10% of the number of shares of Series A Preferred Stock issued in the Offering, exercisable for a period of 7 years from the Closing Date at a per Share exercise price equal to 110% of the price per Share sold in the Offering. These commissions are also payable on additional sales by the Company of securities (other than in a public offering) to investors introduced to the Company by Paramount during the 12 month period subsequent to the final closing of the Offering. The Company also agreed to pay to Paramount a non-accountable expense allowance of $50 thousand to reimburse Paramount for its out-of-pocket expenses. Also, for a period of 36 months from the final Closing, Paramount has the right of first refusal to act as the placement agent for the private sale of the Company s securities. Lastly, the Company has agreed to indemnify Paramount against certain liabilities, including liabilities under the Securities Act.

In connection with the 2006 Offering, on May 3, 2006, the Company paid Paramount a cash commission equal to 7% of the gross proceeds from the sale of the Shares sold by Paramount in the 2006 Offering, resulting in a cash payment of approximately $1.7 million. In addition, the Company issued 7-year warrants to the 2006 Placement Agents and their designees to purchase an aggregate of 799,126 shares (10% of the Shares sold in the Offering) of the Company s common stock, of which 532,750 were issued to Paramount at an exercise price of $5.09 per share.

On December 18, 2006 the Company paid Paramount a cash settlement of $180 thousand in exchange for Paramount s agreement to terminate certain of its rights under the 2005 and 2004 agreements. This amount was expensed in the year ended December 31, 2006.

Mr. Timothy McInerney, who is a member of the Board of Directors of the Company, was a full-time employee of Paramount from 1992 through March 2007. In addition, Michael Weiser, a current member of the Board of Directors of the Company, and David M. Tanen, who was a member of the Board of Directors of the Company, were full-time employees of Paramount from July 1998 through November 2006, and July 1996 through August 2004, respectively. Mr. John Knox, our former Treasurer, was also a full-time Paramount employee.

In connection with the 2007 Offering, on February 23, 2007, the Company paid Paramount cash commissions equal to 6% of the gross proceeds from the sale of the shares sold by Paramount in the 2007 Offering, resulting in a cash payment of approximately $1.0 million. In addition, the Company issued 5-year warrants to the placement agents in the 2007 Offering and their designees to purchase an aggregate of 177,302 shares (3% of the shares sold in the 2007 Offering) of the Company s common stock at an exercise price of $5.75 per share, of which 97,536 were issued to Paramount.

During the year ended December 31, 2008, there were no related party transactions.

Mr. Timothy McInerney, who is a member of the Board of Directors of the Company, has been a Partner at Riverbank Capital Securities, Inc. since June 2007. In connection with the 2009 Private Placement, on September 15, 2009, the

Company paid Riverbank Capital Securities, Inc. cash commissions equal to 3.325% of the gross proceeds from the sale of the shares sold by Riverbank Capital Securities, Inc. in the 2009 Private Placement, resulting in a payment of approximately $168 thousand. In addition, the Company issued 5-year warrants to the placement agents in the 2009 Private Placement and their designees to purchase an aggregate of 138,617 shares of the Company s common stock (5% of the shares sold in the September 2009 Offering) at an exercise price of $2.04 per share, of which 65,843 were issued to Riverbank Capital Securities, Inc.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

7. Related Party Transactions (Continued)

On January 6, 2011, the Company entered into an Exclusive Channel Partner Agreement, or Channel Agreement, with Intrexon Corporation, or Intrexon (see Note 8 to the financial statements, Commitments and Contingencies, for additional disclosure relating to the Channel Agreement). Our director, Randall J. Kirk, is the CEO, a director, and the largest stockholder of Intrexon. During the year ended December 31, 2012, the Company paid Intrexon approximately $11.4 million, of which $6.6 million was for services already incurred and the remaining $4.8 million was for services expected to be incurred within a year. This amount was included as part of prepaid expenses and other current assets on the balance sheet as of December 31, 2012. During the year ended December 31, 2013, the Company expensed $7.8 million for services performed by Intrexon, of which $4.8 million was applied to the prepaid balance in other current assets, $2.4 million was paid to Intrexon and $0.6 million was recorded in accrued expenses. As of December 31, 2013, the prepaid balance in other current assets on the accompanying balance sheet has been reduced to $0.

On January 25, 2012, Intrexon purchased 1,923,075 shares of common stock in the Company s public offering (see Note 2 to the financial statements, Financings).

On November 7, 2012, the Company issued 3,636,926 shares of common stock to Intrexon (see Note 11 to the financial statements, Preferred Stock and Stockholders Equity).

On October 29, 2013, Intrexon purchased 2,857,143 shares of common stock in the Company s public offering (see Note 2 to the financial statements, Financings).

8. Commitments and Contingencies

Operating Leases

Prior to December 31, 2012, the Company entered into an operating lease in New York, NY, consisting of 6,251 square feet of office space. In accordance with this agreement, the Company entered into a letter of credit in the amount of $388 thousand, naming the Company s landlord as beneficiary. In January 2012, the Company amended the lease agreement, adding 1,008 square feet of office space. As of December 31, 2012, the Company occupied 7,259 square feet of space in New York, NY, and maintained a $388 thousand letter of credit. The collateral for the letter of credit is recorded in other non-current assets on the balance sheet as of December 31, 2012. The lease for office space in New York, NY expires in October 2018.

On October 17, 2013, the Company entered into a sublease agreement to lease 7,259 square feet in our New York office to a subtenant. The Company remains primarily liable to pay rent on the original lease. We recorded a loss on the sublease in the amount of $729 thousand for the year ended December 31, 2013, representing the remaining contractual obligation of $2.3 million, less $1.6 million in payments from our subtenant. We retired assets in this subleased area as a result of this sublease with a net book value of $392 thousand, and recorded a loss on disposal of

fixed assets for the same amount for the year ended December 31, 2013. The Company continues to maintain a $388 thousand letter of credit. The collateral for the letter of credit is recorded in other non-current assets on the balance sheet as of December 31, 2013. The lease for office space in New York, NY expires in October 2018.

Prior to December 31, 2012, the Company entered into separate operating lease agreements for various spaces in a building in Boston, MA. That space consisted of 5,249 square feet on the first floor, 8,538 square feet on the second floor, and 6,959 square feet on the third floor. In June 2012, the Company re-negotiated a master lease for the entire Boston office space, added 9,800 square feet of office space on the fourth floor, surrendered 4,113

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

8. Commitments and Contingencies (Continued)

square feet from the second floor, and incorporated all floors lease agreements under the same master agreement expiring in August 2016. The Company provided an additional $41 thousand security deposit for the additional space on the fourth floor. As of December 31, 2012, a total security deposit of $127 thousand was paid to its landlord for security deposits for these agreements.

On August 30, 2013, the Company entered into a sublease agreement to lease 5,249 square feet in our Boston office to a subtenant. The Company remains primarily liable to pay rent on the original lease. We recorded a loss on the sublease in the amount of $42 thousand for the year ended December 31, 2013, representing the remaining contractual obligation of $367 thousand, less $325 thousand in payments from our subtenant. We retired assets in this subleased area as a result of this sublease with a net book value of $194 thousand, and recorded a loss on disposal of fixed assets. In accordance with the sublease agreement, the subtenant provided the Company with a security deposit of $20 thousand, which is recorded in other non-current assets and other liabilities on the balance sheet for the year ended December 31, 2013.

As of December 31, 2013, the Company occupies 21,184 square feet of space in its Boston, MA office and has paid a total of $127 thousand for security deposits, which are recorded in other non-current assets on the balance sheet.

In April 2011, the Company entered into an operating lease for office space in Germantown, MD, consisting of 2,227 square feet. As of December 31, 2011, the Company recorded the $4 thousand security deposit in other non-current assets on the balance sheet. The lease would have expired in March 2014; however, on July 16, 2012, the Germantown, Maryland office was closed. In June 2013, we paid off the remainder of the Germantown, Maryland lease obligation.

Future net minimum lease payments under operating leases as of December 31, 2013 are as follows (in thousands):

2014	$ 1,196
2015	1,236
2016	997
2017	501
2018	424
	4,354
Less: contractual sublease income	(1,883)
Future minimum lease payments, net	$ 2,471

Total rent expense was approximately $1.0 million, $1.1 million, $647 thousand, and $5.2 million for the years ended December 31, 2013, 2012, 2011 and from September 9, 2003 (date of inception) to December 31, 2013, respectively.

The Company records rent expense on a straight-line basis over the term of the lease. Accordingly, the Company has recorded a liability for deferred rent at December 31, 2013 and 2012 of $1.1 million ($212 thousand current and $851 long-term) and $439 thousand ($39 thousand current and $400 thousand long-term), respectively, which is recorded in deferred rent on the balance sheet.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

8. Commitments and Contingencies (Continued)

License Agreements

Patent and Technology License Agreement The University of Texas M. D. Anderson Cancer Center and the Texas A&M University System.

On August 24, 2004, the Company entered into a patent and technology license agreement with The Board of Regents of the University of Texas System, acting on behalf of The University of Texas M. D. Anderson Cancer Center and the Texas A&M University System, which the Company refers to, collectively, as the Licensors. Under this agreement, the Company was granted an exclusive, worldwide license to rights (including rights to U.S. and foreign patent and patent applications and related improvements and know-how) for the manufacture and commercialization of two classes of organic arsenicals (water- and lipid-based) for human and animal use. The class of water-based organic arsenicals includes darinaparsin.

As partial consideration for the license rights obtained, the Company made an upfront payment in 2004 of $125 thousand and granted the Licensors 250,487 shares of the Company s common stock. In addition, the Company issued options to purchase an additional 50,222 shares outside the 2003 Stock Option Plan for $0.002 per share following the successful completion of certain clinical milestones, which vested with respect to 12,555 shares upon the filing of an Investigation New Drug application, or IND, for darinaparsin in 2005 and vested with respect to another 25,111 shares upon the completion of dosing of the last patient for both Phase 1 clinical trials in 2007. The Company recorded $120 thousand of stock based compensation expense related to the vesting in 2007. The remaining 12,556 shares will vest upon enrollment of the first patient in a multi-center pivotal clinical trial i.e. a human clinical trial intended to provide the substantial evidence of efficacy necessary to support the filing of an approvable New Drug Application, or NDA. In addition, the Licensors are entitled to receive certain milestone payments, including $100 thousand that was paid in 2005 upon the commencement of Phase 1 clinical trial and $250 thousand that was paid in 2006 upon the dosing of the first patient in the Registrant-sponsored Phase 2 clinical trial for darinaparsin. The Company may be required to make additional payments upon achievement of certain other milestones in varying amounts which on a cumulative basis could total up to an additional $4.5 million. In addition, the Licensors are entitled to receive single digit percentage royalty payments on sales from a licensed product and will also be entitled to receive a portion of any fees that the Company may receive from a possible sublicense under certain circumstances. In addition, the Company also paid the Licensors $100 thousand in 2006 and 2007 to conduct scientific research with the Company obtaining exclusive right to all resulting intellectual property rights. The sponsored research agreements governing this research and any related extensions expired in February 2008 with no payments being made subsequent to that date.

The license agreement also contains other provisions customary and common in similar agreements within the industry, such as the right to sublicense the Company rights under the agreement. However, if the Company sublicenses its rights prior to the commencement of a pivotal study i.e. a human clinical trial intended to provide the substantial evidence of efficacy necessary to support the filing of an approvable NDA, the Licensors will be entitled to receive a share of the payments received by the Company in exchange for the sublicense (subject to certain exceptions). The term of the license agreement extends until the expiration of all claims under patents and patent

applications associated with the licensed technology, subject to earlier termination in the event of defaults by the Company or the Licensors under the license agreement, or if the Company becomes bankrupt or insolvent. No milestones under the license agreement were reached or expensed during the years ended December 31, 2013, 2012 or 2011.

License Agreement with DEKK-Tec, Inc.

On October 15, 2004, the Company entered into a license agreement with DEKK-Tec, Inc., pursuant to which it was granted an exclusive, worldwide license for palifosfamide. As part of the signing of license agreement with DEKK-Tec, the Company expensed an upfront $50 thousand payment to DEKK-Tec in 2004.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

8. Commitments and Contingencies (Continued)

In consideration for the license rights, DEKK-Tec is entitled to receive payments upon achieving certain milestones in varying amounts which on a cumulative basis may total $4.0 million. Of the aggregate milestone payments, most will be creditable against future royalty payments as referenced below. The Company expensed a $100 thousand milestone payment upon achieving Phase 2 milestones during the year ended December 31, 2006. Additionally, in 2004 the Company issued DEKK-Tec an option to purchase 27,616 shares of the Company s common stock for $0.02 per share. Upon the execution of the license agreement, 6,904 shares vested and were subsequently exercised in 2005 and the remaining options will vest upon certain milestone events, culminating with final FDA approval of the first NDA submitted by the Company (or by its sublicensee) for palifosfamide. DEKK-Tec is entitled to receive single digit percentage royalty payments on the sales of palifosfamide should it be approved for commercial sale. On March 16, 2010, the Company expensed a $100 thousand milestone payment upon receiving a United States Patent for palifosfamide. There were no payments made during 2009. In December 2010, the Company expensed a $300 thousand milestone payment and vested 6,904 stock options upon achieving Phase 3 milestones. These options were subsequently exercised in 2011. The Company s obligation to pay royalties will terminate on a country-by-country basis upon the expiration of all valid claims of patents in such country covering licensed product, subject to earlier termination in the event of defaults by the parties under the license agreement. No milestones under the license agreement have been reached or expensed since 2010.

License Agreement with Southern Research Institute

On December 22, 2004, the Company entered into an Option Agreement with the Southern Research Institute, or SRI, pursuant to which the Company was granted an exclusive option to obtain an exclusive license to SRI s interest in certain intellectual property, including exclusive rights related to certain isophosphoramide mustard analogs.

Also on December 22, 2004, the Company entered into a Research Agreement with SRI pursuant to which the Company agreed to spend a sum not to exceed $200 thousand between the execution of the agreement and December 21, 2006, including a $25 thousand payment that was made simultaneously with the execution of the agreement, to fund research and development work by SRI in the field of isophosphoramide mustard analogs. The option agreement was exercised on February 13, 2007. Under the license agreement entered into upon exercise of the option, the Company is required to remit minimum annual royalty payments of $25 thousand until the first commercial sale of a licensed product. These payments were made for the years ended December 31, 2013, 2012, 2011, 2010, 2009 and 2008. The Company may be required to make payments upon achievement of certain milestones in varying amounts which on a cumulative basis could total up to $775,000. In addition, SRI will be entitled to receive single digit percentage royalty payments on the sales of a licensed product in any country until all licensed patents rights in that country which are utilized in the product have expired. No milestones under the license agreement were reached or expensed since the agreement s inception.

License Agreement with Baxter Healthcare Corporation

On November 3, 2006, the Company entered into a definitive Asset Purchase Agreement for indibulin and a License Agreement to proprietary nanosuspension technology with affiliates of Baxter Healthcare S.A. The purchase included the entire indibulin intellectual property portfolio as well as existing drug substance and capsule inventories. The terms of the Asset Purchase Agreement included an upfront cash payment of approximately $1.1 million and an additional $100 thousand payment for existing inventory, both of which were expensed in 2006. In addition to the upfront costs, the Asset Purchase Agreement includes additional diligence and milestone payments that could amount to approximately $8 million in the aggregate and royalties on net

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

8. Commitments and Contingencies (Continued)

sales of products covered by a valid claim of a patent for the life of the patent on a country-by-country basis. The Company expensed a $625 thousand milestone payment upon the successful U.S. IND application for indibulin in 2007. The License Agreement requires payment of a $15 thousand annual patent and license prosecution/maintenance fee through the expiration of the last of the licensed patents which is expected to expire in 2025, and single digit royalties on net sales of licensed products covered by a valid claim of a patent for the life of the patent on a country-by-country basis. The term of the license agreement extends until the expiration of the last to expire of the patents covering the licensed products, subject to earlier termination in the event of defaults by the parties under the license agreement.

In October 2009, the Baxter License Agreement was amended to allow the Company to manufacture indibulin. No milestones under the license agreement were reached or expensed during the years ended December 31, 2011 or 2010. During each of the years ended December 31, 2013 and 2012, milestones of $250 thousand were reached and expensed.

Exclusive Channel Partner Agreement with Intrexon Corporation

On January 6, 2011, we entered into an Exclusive Channel Partner Agreement, or the Channel Agreement, with Intrexon that governs a channel partnering arrangement in which we use Intrexon s technology directed towards *in vivo* expression of effectors in connection with the development of Ad-RTS-IL-12 + veledimex and DC-RTS-IL-12 + veledimex and generally to research, develop and commercialize products, in each case in which DNA is administered to humans for expression of anti-cancer effectors for the purpose of treatment or prophylaxis of cancer, which we collectively refer to as the Cancer Program. The Channel Agreement establishes committees comprised of representatives of us and Intrexon that govern activities related to the Cancer Program in the areas of project establishment, chemistry, manufacturing and controls, clinical and regulatory matters, commercialization efforts and intellectual property.

The Channel Agreement grants us a worldwide license to use patents and other intellectual property of Intrexon in connection with the research, development, use, importing, manufacture, sale, and offer for sale of products involving DNA administered to humans for expression of anti-cancer effectors for the purpose of treatment or prophylaxis of cancer, which we collectively refer to as the ZIOPHARM Products. Such license is exclusive with respect to any clinical development, selling, offering for sale or other commercialization of ZIOPHARM Products, and otherwise is non-exclusive. Subject to limited exceptions, we may not sublicense the rights described without Intrexon s written consent.

Under the Channel Agreement, and subject to certain exceptions, we are responsible for, among other things, the performance of the Cancer Program, including development, commercialization and certain aspects of manufacturing of ZIOPHARM Products. Intrexon is responsible for the costs of establishing manufacturing capabilities and facilities for the bulk manufacture of products developed under the Cancer Program, certain other aspects of manufacturing and costs of discovery-stage research with respect to platform improvements and costs of filing, prosecution and

maintenance of Intrexon s patents.

Subject to certain expense allocations and other offsets provided in the Channel Agreement, we will pay Intrexon on a quarterly basis 50% of net profits derived in that quarter from the sale of ZIOPHARM Products, calculated on a ZIOPHARM Product-by- ZIOPHARM Product basis. We have likewise agreed to pay Intrexon on a quarterly basis 50% of revenue obtained in that quarter from a sublicensor in the event of a sublicensing arrangement. In addition, in partial consideration for each party s execution and delivery of the Channel Agreement, we entered into a Stock Purchase Agreement with Intrexon (see Note 2 to the financial statements, Financings).

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

8. Commitments and Contingencies (Continued)

Following the first 24 months of the agreement, Intrexon had the option to terminate the Channel Agreement, if we failed to use diligent efforts to develop and commercialize ZIOPHARM Products or if we elected not to pursue the development of a Cancer Program identified by Intrexon that is a Superior Therapy as defined in the Channel Agreement. Also following the first 24 months of the agreement, we had the option to voluntarily terminate the Channel Agreement, upon 90 days written notice to Intrexon. The 24 month termination period expired during the year ended December 31, 2013.

Upon termination of the Channel Agreement, we may continue to develop and commercialize any ZIOPHARM Product that, at the time of termination:

- Is being commercialized by us;
- Has received regulatory approval;
- Is a subject of an application for regulatory approval that is pending before the applicable regulatory authority; or
- Is the subject of at least an ongoing Phase 2 clinical trial (in the case of a termination by Intrexon due to an uncured breach or a voluntary termination by us), or an ongoing Phase 1 clinical trial in the field (in the case of a termination by us due to an uncured breach or a termination by Intrexon following an unconsented assignment by us or our election not to pursue development of a Superior Therapy).

Our obligation to pay 50% of net profits or revenue described above with respect to these retained products will survive termination of the Channel Agreement.

Collaboration Agreement with Harmon Hill, LLC

On April 8, 2008, the Company signed a collaboration agreement for Harmon Hill, LLC, or Harmon Hill, to provide consulting and other services for the development and commercialization of oncology therapeutics by ZIOPHARM. Under the agreement the Company has agreed to pay Harmon Hill $20 thousand per month for the consulting services and has further agreed to pay Harmon Hill (a) $500 thousand upon the first patient dosing of the Specified Drug, as defined in the collaboration agreement, in a pivotal trial, which trial uses a dosing Regime introduced by Harmon Hill; and (b) provided that the Specified Drug receives regulatory approval from the FDA, the European Medicines Agency or another regulatory agency for the marketing of the Specified Drug, a 1% royalty of the Company s net sales will be awarded to Harmon Hill.

If the Specified Drug is sublicensed to a third party, the agreement entitles Harmon Hill to 1% award of royalties or other payments received from a sublicense. Subject to renewal or extension by the parties, the term of the agreement was for a one year period that expired April 8, 2009. Following such expiration, the parties continued to operate under the terms of the agreement and, during 2010, the agreement was formally extended through April 8, 2011 and again through April 8, 2012. The agreement was extended through November 8, 2012 and has now expired. The Company expensed $240 thousand during the years ended December 31, 2011 and 2010 and expensed $200 thousand during the year ended December 31, 2012 for consulting services per the aforementioned agreement. No milestones under the collaboration agreement were reached or expensed during the years ended December 31, 2013, 2012, 2011 or 2010.

On June 27, 2013, the Company signed a new collaboration agreement with Harmon Hill to provide consulting and other services for the development and commercialization of oncology therapeutics by ZIOPHARM,

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

8. Commitments and Contingencies (Continued)

effective April 1, 2013. Under the agreement the Company has agreed to pay Harmon Hill $15 thousand per month for the consulting services. Subject to renewal or extension by the parties, the term of the agreement is for a one year period. The Company expensed $135 thousand for the year ended December 31, 2013.

Collaboration Agreement with Solasia Pharma K.K.

On March 7, 2011, the Company entered into a License and Collaboration Agreement with Solasia Pharma K.K., or Solasia.

Pursuant to the License and Collaboration Agreement, the Company granted Solasia an exclusive license to develop and commercialize darinaparsin in both IV and oral forms and related organic arsenic molecules, in all indications for human use in a pan- Asian/Pacific territory comprised of Japan, China, Hong Kong, Macau, Republic of Korea, Taiwan, Singapore, Australia, New Zealand, Malaysia, Indonesia, Philippines and Thailand.

As consideration for the license, the Company received an upfront payment of $5.0 million to be used exclusively for further clinical development of darinaparsin outside of the pan-Asian/Pacific territory, and will be entitled to receive additional payments of up to $32.5 million in development-based milestones and up to $53.5 million in sales-based milestones. The Company will also be entitled to receive double digit royalty payments from Solasia based upon net sales of licensed products in the applicable territories, once commercialized, and a percentage of sublicense revenues generated by Solasia.

The upfront payment for research and development funding is earned over the period of effort. The Company currently estimates this period to be 75 months, which could be adjusted in the future.

Under the License and Collaboration Agreement, the Company provides Solasia with drug product to conduct clinical trials. These transfers are accounted for as a reduction of research and development costs and an increase in collaboration receivables.

The agreement provides that Solasia will be responsible for the development and commercialization of darinaparsin in the pan-Asian/Pacific territory.

CRO Services Agreement with PPD Development, L. P.

The Company is party to a Master Clinical Research Organization Services Agreement with PPD Development, L. P., or PPD, dated January 29, 2010, a related work order dated June 25, 2010 and a related work order dated April 8, 2011 under which PPD provides clinical research organization, or CRO, services in support of the Company s clinical trials. PPD is entitled to cumulative payments of up to $20.0 million under these arrangements, which is payable by the Company in varying amounts upon PPD achieving specified milestones. During the year ended December 31, 2010, the Company expensed $1.8 million upon contract execution and $1.1 million upon a clinical study

commencement of enrollment in North America. During the year ended December 31, 2011, additional milestones related to commencing enrollment in Europe, Latin America and Asia along with enrollment based milestones were met and the Company recorded an aggregate $4.0 million expense. During the year ended December 31, 2012, additional enrollment-based and contract modification milestones were met and expensed totaling $3.8 million. During the year ended December 31, 2013, patient progression and data based milestones totaling $9.2 million were met and expensed.

CRO Services Agreement with Pharmaceutical Research Associates, Inc.

On December 13, 2011, we entered into a Master Clinical Research Organization Services Agreement with Pharmaceutical Research Associates, Inc., or PRA, under which PRA provides CRO services in support of our

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

8. Commitments and Contingencies (Continued)

clinical trials. PRA is entitled to cumulative payments of up to $9.5 million under these arrangements, which is payable by us in varying amounts upon PRA achieving specified milestones. During the year ended December 31, 2012, we expensed $7.3 million upon the achievement of various letter of intent and enrollment-based milestones. During the year ended December 31, 2013, contract modification and patient enrollment based milestones totaling $2.2 million were met and expensed.

CRO Services Agreement with Novella Clinical, Inc.

On December 4, 2008, we entered into a Master Clinical Research Organization Services Agreement with Novella Clinical, Inc., or Novella, under which PRA provides CRO services in support of our clinical trials. The work order for the newest trial being conducted by Novella was signed on November 2, 2012. Novella is entitled to cumulative payments of up to $790 thousand under these arrangements, which is payable by us in varying amounts upon Novella achieving specified milestones. During the year ended December 31, 2012, we expensed $256 thousand upon the achievement of various milestones. During the year ended December 31, 2013, two database related milestones and one site activation related milestone were met and expensed totaling $136 thousand.

9. Warrants

The Company has issued both warrants that are accounted for as liabilities and warrants that are accounted for as equity instruments.

The Company follows accounting standards that provide guidance in assessing whether an equity-issued financial instrument is indexed to an entity s own stock for purposes of determining whether a financial instrument should be treated as a derivative and classified as a liability. Accounting standards require that liability classified warrants be recorded at their fair value at each financial reporting period and the resulting gain or loss be recorded as other income (expense) in the Statements of Operations. Fair value is measured using the binomial valuation model.

In May 2005, the Company issued 419,786 warrants to placement agents for services performed in connection with the 2005 Offering, 11,083 of which were subsequently exercised. The remaining 408,703 warrants were originally valued at $1.6 million. Subject to certain exceptions, these warrants provide for anti-dilution protection should common stock or common stock equivalents be subsequently issued at a price less than the exercise price of the warrants then in effect, which was initially $4.75 per share. This provision was triggered in 2006 when stock was sold at $4.63 per share in the 2006 Offering. Accordingly, the warrants were re-priced at $4.69. The provision was triggered a second time with 2009 Private Placement when stock was sold at $1.825 per share and the warrants were subsequently re-priced at $4.25. The provision was triggered again with the Company s December 2009 public offering when stock was sold at $3.10 per share and the warrants were subsequently re-priced at $3.93. Using a Black-Scholes model, the warrants were valued at $72 thousand on January 1, 2009, when the accounting standard was adopted. The reclassification attributed to adoption of the standard had the following cumulative effect on the

Balance Sheets:

(in thousands)	Liabilities	Stockholders Equity	
	Warrants	Warrants	Deficit Accumulated During the Development Stage
As reported on December 31, 2008	$	$ 20,504	$ (85,061)
Re-classification	72	(1,638)	1,566
Balance on January 1, 2009	$ 72	$ 18,866	$ (83,495)

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

9. Warrants (Continued)

The following Black-Scholes pricing assumptions were used at January 1, 2009:

	January 1, 2009
Risk-free interest rate	1.55%
Expected life in years	3.42
Expected volatility	102%
Expected dividend yield	0

Also, in connection with the December 2009 public offering, the Company issued warrants to purchase an aggregate of 8,206,520 shares of common stock (including the investor warrants and 464,520 warrants issued to the Underwriters). The investor warrants are exercisable immediately and the underwriter warrants exercisable six months after the date of issuance. The warrants have an exercise price of $4.02 per share and have a 5 year term. The fair value of the warrants was estimated at $22.9 million using a Black-Scholes model with the following assumptions: expected volatility of 105%, risk free interest rate of 2.14%, expected life of 5 years and no dividends.

Subject to certain exceptions, these warrants provide for anti-dilution protection should common stock or common stock equivalents be subsequently issued at a price less than the exercise price of the warrants then in effect, which was initially $4.02 per share. This provision was triggered in 2013 when stock was sold at $3.50 per share in our 2013 public offering. Accordingly, the outstanding warrants were increased by 184,367 warrants to 8,235,076 warrants.

The Company assessed whether the 2005 Warrants and the 2009 Warrants require accounting as derivatives. The Company determined that the warrants were not indexed to the Company s own stock in accordance with accounting standards codification Topic 815, *Derivatives and Hedging*. As such, the Company has concluded the warrants did not meet the scope exception for determining whether the instruments require accounting as derivatives and should be classified in liabilities.

On December 31, 2013, the liability-classified warrants were valued at $11.8 million using a Binomial/Monte Carlo valuation model. The decrease in the fair value of the warrant liabilities of $1.2 million for the year ended December 31, 2013 was charged to Other income, net in the Statements of Operations.

On December 31, 2012, the liability-classified warrants were valued at $13.0 million using a Binomial/Monte Carlo valuation model. The decrease in the fair value of the warrant liabilities of $6.1 million for the year ended December 31, 2012 was charged to Other income, net in the Statements of Operations.

On December 31, 2011, the liability-classified warrants were valued at $19.4 million using a Binomial/Monte Carlo valuation model. The decrease in the fair value of the warrant liabilities of $7.6 million for the year ended December 31, 2011 was charged to Other income, net in the Statements of Operations. Additionally, $0.3 million of the decrease resulted from the exercise of warrants.

The following pricing assumptions were used in the Binomial/Monte Carlo valuation model at December 31, 2013, 2012 and 2011:

	December 31, 2013	December 31, 2012	December 31, 2011
Risk-free interest rate	0.13%	0.25%	0.05 - 0.35%
Expected life in years	0.94	1.94	0.42 - 2.92
Expected volatility	80%	70%	64 - 80%
Expected dividend yield	0	0	0

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

9. Warrants (Continued)

Warrants accounted for as equity instruments include the following issuances:

During 2004, the Company issued warrants to purchase 62,621 shares of the Company s common stock to Paramount as compensation for services rendered in connection with our entering into an option agreement with Southern Research Institute. In connection with the warrants issued, the Company recorded a charge of $251 thousand to general and administrative expense. The Company has estimated the fair value of such options using the Black-Scholes model, using an assumed risk-free rate of 3.93%, and expected life of 7 years, volatility of 134% and dividend yield of 0%.

In 2005, the Company issued performance warrants to purchase 50,000 shares of the Company s common stock for services to be rendered to its investor relations consultant as compensation. In connection with the warrant issuance, 12,500 shares were exercisable immediately and the Company recorded a charge of $45 thousand to general and administrative expense in the year ended December 31, 2005. The Company has estimated the fair value of such options using the Black-Scholes model, using an assumed risk-free rate of 4.39%, an expected life of 5 years, volatility of 109%, and dividend yield of 0%. The remaining 37,500 warrants were cancelled in the year ended December 31, 2006 due to performance objectives not being obtained at the expiration of agreement.

In connection with the 2006 Offering completed on May 3, 2006, the Company issued warrants to purchase 2,397,392 shares of common stock to investors and 799,126 warrants to purchase common stock to the 2006 Placement Agents and their designees. The Company estimated the fair value of the warrants at $9.6 million and $3.5 million, respectively, using the Black-Scholes model, using an assumed risk-free rate of 5.01% and an expected life of 5 and 7 years, volatility of 100% and a dividend yield of 0%.

On February 23, 2007, as part of the 2007 Offering, the Company issued warrants to purchase 1,182,015 shares of common stock to investors and 177,302 warrants to purchase common stock to the placement agents in connection with the Company s 2007 private placement, their designees and a previously-engaged financial consultant. The Company estimated the fair value of the warrants at $4.7 million and $709 thousand respectively, using the Black-Scholes model, using an assumed risk-free rate of 4.71% and an expected life of 5 years, volatility of 93% and a dividend yield of 0%.

In connection with its 2009 private placement, the Company issued warrants to purchase an aggregate of 2,910,954 shares of common stock (including 138,617 warrants issued to the placement agents) which were exercisable immediately. The warrants have an exercise price of $2.04 per share and have a 5 year term. The fair value of the warrants was estimated at $4,207 thousand using a Black-Scholes model with the following assumptions: expected volatility of 105%, risk free interest rate of 2.41%, expected life of 5 years and no dividends. The fair value of the warrants was recorded in the equity section of the balance sheet. In October 2009, 136,986 of these warrants were exercised.

During 2010, no new warrants were issued. However, 95,505 warrants were exercised for 39,225 shares of common stock. Of these warrants, 70,738 were equity-classified and 24,767 were liability-classified. Additionally, 12,500 equity-classified warrants expired without being exercised.

During 2011, no new warrants were issued. However, 2,516,968 warrants were exercised for 2,377,571 shares of common stock. Of these warrants, 2,351,417 were equity-classified and 165,551 were liability-classified. Additionally, 277,910 equity-classified warrants expired without being exercised.

During 2012, no new warrants were issued. However, 553,914 warrants were exercised for 259,660 shares of common stock. Of these warrants, 186,297 were equity-classified and 373,617 were liability-classified. Additionally, 1,359,317 equity-classified warrants and 579 liability-classified warrants expired without being exercised.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

9. Warrants (Continued)

During 2013, no new warrants were issued. However 135,346 warrants were exercised for 112,808 shares of common stock. Of these warrants, all 135,346 were equity-classified; there were no liability-classified warrants exercised. Additionally, 706,708 equity-classified warrants expired without being exercised. All warrants will expire during the year ending December 31, 2014.

The following is a summary of warrants outstanding as of December 31, 2013.

Number of Warrants	Issued in Connection With	Exercise Price	Expiration Date
2,264,393	Investor warrants	$ 2.04	September 15, 2014
40,298	Placement warrants for services performed	2.04	September 15, 2014
8,235,076	Investor warrants	4.02	December 9, 2014
10,539,767			

10. Income Taxes

There is no provision for income taxes because the Company has incurred operating losses since inception. The reported amount of income tax expense for the years differs from the amount that would result from applying domestic federal statutory tax rates to pretax losses primarily because of the changes in the valuation allowance. Significant components of the Company s deferred tax assets at December 31, 2013 and 2012 are as follows:

	December 31,	
(in thousands)	**2013**	**2012**
Net operating loss carryforwards	$ 66,209	$ 42,715
Start-up and organizational costs	41,529	44,262
Research and development credit carryforwards	25,058	18,388
Stock compensation	1,028	991
Capitalized acquisition costs	12,323	13,270
Deferred revenue	1,074	1,388
Depreciation	129	331
Other	1,254	998
	148,604	122,343

Less valuation allowance	(148,604)	(122,343)
Net deferred tax assets	$	$

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amount of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. At December 31, 2013, the Company has aggregate net operating loss carryforwards for federal tax purposes of approximately $197.0 million available to offset future federal taxable income to the extent permitted under the Internal Revenue Code of 1986, as amended, or IRC, expiring in varying amounts through 2032. Additionally, the Company has approximately $25.0 million of research and development credits at December 31, 2013, expiring in varying amounts through 2032, which may be available to reduce future taxes.

Under the IRC Section 382, certain substantial changes in the Company s ownership may limit the amount of net operating loss carryforwards that can be utilized in any one year to offset future taxable income. The net

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

10. Income Taxes (Continued)

operating loss carryforwards for the year ended December 31, 2013 includes approximately $4.2 million resulting from excess tax deductions from stock options. Pursuant to ASC 740, the deferred tax asset relating to excess tax benefits generated from exercises of stock options was not recognized for financial statement purposes.

Section 382 of the IRC provides limits to which a corporation that has undergone a change in ownership (as defined) can utilize any net operating loss, or NOL, and general business tax credit carryforwards it may have. The Company commissioned an analysis to determine whether Section 382 could limit the use of its carryforwards in this manner. After completing the analysis, it was determined an ownership change had occurred in February 2007. As a result of this change, the Company s NOL s and general business tax credits from February 23, 2007 and prior would be completely limited under IRC Section 382. The deferred tax assets related to NOL s and general business credits have been reduced by $11.2 million and $636 thousand, respectively, as a result of the change. The Company updated the IRC Section 382 analysis through December 31, 2013. It was determined a change of ownership occurred on February 28, 2011. The Company s NOL s were not further limited as a result of the change.

The Company has provided a valuation allowance for the full amount of these net deferred tax assets, since it is more likely than not that these future benefits will not be realized. However, these deferred tax assets may be available to offset future income tax liabilities and expenses. The valuation allowance increased by $26.3 million primarily due to net operating loss carryforwards, start-up and organizational costs, and the increase in research and development credits.

A reconciliation of income tax expense (benefit) at the statutory federal income tax rate and income taxes as reflected in the financial statements is as follows:

	Year Ended December 31,		
(in thousands)	**2013**	**2012**	**2011**
Federal income tax at statutory rates	34%	34%	34%
State income tax, net of federal tax benefit	4%	5%	6%
Research and development credits	9%	10%	11%
Stock compensation	-2%	-1%	-1%
Uncertain tax position adjustment	0%	0%	0%
Change in warrant value	1%	2%	4%
Federal R&D tax grant	0%	0%	0%
Other	0%	0%	0%
Increase in valuation allowance	-46%	-49%	-54%
Effective tax rate	0%	0%	0%

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

10. Income Taxes (Continued)

The Company adopted ASC740, Accounting for Uncertain Tax Positions on January 1, 2007. ASC740 clarifies the accounting for uncertainty in income taxes recognized in an enterprise s financial statements in accordance with FASB Statement No. 109, Accounting for Income Taxes. ASC 740 prescribes a recognition threshold and measurement of a tax position taken or expected to be taken in a tax return. The Company did not establish any additional reserves for uncertain tax liabilities upon adoption of ASC 740. A summary of the company s adjustments to its uncertain tax positions in the years ended December 31, 2013, 2012, and 2011 are as follows:

(in thousands)	
Balance at December 31, 2010	$ 275
Increase/Decrease for tax positions related to the current year	
Increase/Decrease for tax positions related to prior years	
Decreases for settlements with applicable taxing authorities	
Decreases for lapses of statute of limitations	
Balance at December 31, 2011	$ 275
Increase/Decrease for tax positions related to the current year	
Increase/Decrease for tax positions related to prior years	
Decreases for settlements with applicable taxing authorities	
Decreases for lapses of statute of limitations	
Balance at December 31, 2012	$ 275
Increase/Decrease for tax positions related to the current year	
Increase/Decrease for tax positions related to prior years	(37)
Decreases for settlements with applicable taxing authorities	
Decreases for lapses of statute of limitations	
Balance at December 31, 2013	$ 238

The Company has not recognized any interest and penalties in the statement of operations because of the Company s net operating losses and tax credits that are available to be carried forward. When necessary, the Company will account for interest and penalties related to uncertain tax positions as part of its provision for federal and state income taxes. The Company does not expect the amounts of unrecognized benefits will change significantly within the next twelve months.

The Company is currently open to audit under the statute of limitations by the Internal Revenue Service and state jurisdictions for the years ended December 31, 1999 through 2013.

11. Preferred Stock and Stockholders Equity

On April 26, 2006, the date of the Company s annual stockholders meeting that year, the shareholders approved the adoption of an Amended and Restated Certificate of Incorporation pursuant to which the Company has 280,000,000 shares of authorized capital stock, of which 250,000,000 shares are designated as common stock (par value $.001 per share), and 30,000,000 shares are designated as preferred stock (par value $.001 per share), which the Company refers to as the Preferred Stock.

Common Stock

In September 2003, the Company issued 1,001,949 shares of common stock at $0.50 per share for gross proceeds of $500 thousand.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

11. Preferred Stock and Stockholders Equity (Continued)

In January 2004, the Company issued 9,017,538 shares of common stock at $0.50 per share for gross proceeds of $4.5 million.

In February 2004, the Company amended its articles of incorporation to provide for the combination of the Company s common stock, par value $0.001 per share on a 1-for-4 basis.

On June 6, 2005, the Company completed the 2005 Offering (see Note 2 to the financial statements, Financings). As a result of the Merger, all shares of the Series A Preferred Stock were automatically converted into the number of shares of common stock that the holders of Series A Preferred Stock would have received if their shares of Series A Preferred Stock had been converted into common stock immediately prior to the Merger.

On May 3, 2006, pursuant to subscription agreements between the Company and certain institutional and other accredited investors, the Company completed the sale of an aggregate of 7,991,256 shares of the Company s common stock at a price of $4.63 per share in the 2006 Offering. The total gross proceeds resulting from the 2006 Offering was approximately $37 million, before deducting selling commissions and expenses.

On February 23, 2007, pursuant to subscription agreements between the Company and certain institutional and other accredited investors, the Company completed the sale of an aggregate of 5,910,049 shares of the Company s common stock at a price of $5.225 per share in a private placement. The total gross proceeds resulting from the 2007 Offering was approximately $30.9 million, before deducting selling commissions and expenses.

On September 15, 2009, pursuant to subscription agreements between the Company and certain institutional and other accredited investors, the Company completed the sale of an aggregate of 2,772,337 shares of the Company s common stock at a price of $1.825 per share in a private placement. The total gross proceeds resulting from the September 2009 Offering was approximately $5.1 million, before deducting selling commissions and expenses (see Note 2 to the financial statements, Financings).

On December 9, 2009, pursuant to underwriting agreement between the Company and certain brokers, the Company completed the sale of an aggregate of 15,484,000 shares of the Company s common stock at a price of $3.10 per share in a private placement. The total gross proceeds resulting from the 2009 public offering was approximately $48.0 million, before deducting selling commissions and expenses (see Note 2 to the financial statements, Financings).

On June 2, 2010, pursuant to underwriting agreement between the Company and certain brokers, the Company completed the sale of an aggregate of 7,000,000 shares of the Company s common stock at a price of $5.00 per share in a public offering. The total gross proceeds resulting from the 2010 public offering were approximately $35.0 million, before deducting selling commissions and expenses (see Note 2 to the financial statements, Financings).

On January 6, 2011, and in conjunction with the Company s execution and delivery of a Channel Agreement, the Company entered into a Stock Purchase Agreement and Registration Rights Agreement. On January 12, 2011, and

pursuant to that Stock Purchase Agreement, the Company sold 2,426,235 shares of the Company s common stock in a private placement for a total purchase price of $11.6 million, or $4.80 per share. The Company simultaneously issued an additional 3,636,926 shares of its common stock for a cash purchase price equal to the $0.001 par value of such shares, which price was deemed paid in partial consideration for the execution and delivery of the Channel Agreement (see Note 2, Financings).

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

11. Preferred Stock and Stockholders Equity (Continued)

On February 3, 2011, pursuant to underwriting agreement between the Company and certain brokers, the Company completed the sale of an aggregate of 11,040,000 shares of the Company s common stock at a price of $5.75 per share in a public offering. The total gross proceeds resulting from the 2011 public offering were approximately $63.5 million, before deducting selling commissions and expenses (see Note 2 to the financial statements, Financings).

On January 20, 2012, pursuant to an underwriting agreement between the Company and J. P. Morgan Securities LLC, as representative of the several underwriters named therein, the Company completed the sale of an aggregate 10,114,401 shares of the Company s common stock at a price of $5.20 per share in a public offering. The total gross proceeds resulting from the 2012 public offering were approximately $52.6 million, before deducting selling commissions and expenses (see Note 2 to the financial statements, Financings).

On November 7, 2012, the Company issued 3,636,926 shares of our common stock, which we refer to as the Milestone Shares, to Intrexon under the terms of its Stock Purchase Agreement with Intrexon dated January 6, 2011. Under the terms of the Stock Purchase Agreement with Intrexon, the Company agreed to issue the Milestone Shares under certain conditions upon dosing of the first patient in a ZIOPHARM-conducted Phase 2 clinical trial in the Unites States, or similar study as the parties may agree in a country other than the United States, of a product candidate that is created, produced, developed or identified directly or indirectly by us during the term of the Channel Agreement and that, subject to certain exceptions, involves DNA administered to humans for expression of anti-cancer effectors for the purpose of treatment or prophylaxis of cancer. On October 24, 2012, the Company initiated dosing in a Phase 2 study of Ad-RTS-IL-12 + veledimex for unresectable Stage III or IV melanoma, triggering the issuance of the Milestone Shares.

On October 29, 2013, pursuant to an underwriting agreement between the Company and J. P. Morgan Securities LLC, as representative of the several underwriters named therein, the Company completed the sale of an aggregate 16,445,000 shares of the Company s common stock at a price of $3.50 per share in a public offering. The total gross proceeds resulting from this public offering were approximately $57.6 million, before deducting selling commissions and expenses (see Note 2 to the financial statements, Financings).

As of December 31, 2013, the Company had 100,159,618 shares of common stock issued and outstanding and no shares of Preferred Stock issued and outstanding.

Series A Preferred Stock

All shares of Series A Preferred Stock have been converted into shares of common stock of the Company.

Preferred Stock

The Company s Board of Directors are authorized to designate any series of Preferred Stock, to fix and determine the variations in relative rights, preferences, privileges and restrictions as between and among such series.

12. Stock Option Plan

The Company adopted the 2003 Stock Option Plan, or the 2003 Plan, in 2003, under which the Company initially reserved for the issuance of 1,252,436 shares of its common stock. The 2003 Plan was approved by the Company s stockholders on December 21, 2004. On June 23, 2010, June 4, 2009, April 25, 2007 and April 26,

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

12. Stock Option Plan (Continued)

2006, the dates of the Company s annual stockholders meetings during such years, the Company s stockholders approved amendments to the 2003 Plan increasing the total shares reserved by 3,000,000, 2,000,000, 2,000,000 and 750,000 shares, respectively, for a total of 9,002,436 shares. Upon approval of the 2012 Equity Incentive Plan, no additional stock awards may be granted under the 2003 Plan.

The Company adopted the 2012 Equity Incentive Plan, or the 2012 Plan, in May 2012, under which the Company initially reserved for the issuance of 4,000,000 shares of its common stock. The 2012 Plan was approved by the Company s stockholders on June 20, 2012.

As of December 31, 2013, the Company had outstanding options issued to its employees to purchase up to 5,834,408 shares of the Company s common stock, to its directors to purchase up to 912,645 shares of the Company s common stock, as well as options to consultants in connection with services rendered to purchase up to 250 shares of the Company s common stock.

Stock options to employees generally vest ratably over three years and have contractual terms of ten years. Stock options to directors generally vest ratably over two or three years and have contractual terms of ten years. Stock options are valued using the Black-Scholes option pricing model and compensation is recognized based on such fair value over the period of vesting on a straight-line basis. The Company has also reserved an aggregate of 45,823 additional shares for issuance under options granted outside of the 2003 Stock Option Plan. The options were granted to The University of Texas M. D. Anderson Cancer Center and DEKK-Tec, Inc. (see Note 8 to the financial statements, Commitments and Contingencies). During the year ended December 31, 2007, the Company recorded a $120 thousand stock compensation expense in connection with the Company achieving a predetermined development milestone, which triggered the vesting of 25,111 of the options granted outside of the 2003 Stock Option Plan. The 25,111 options were exercised on August 13, 2007. Proceeds from this exercise amounted to $50 thousand and the intrinsic value of these options amounted to $104 thousand. During 2010, the Company recorded an expense of $27 thousand when 6,904 DEKK-Tec stock options vested upon achieving Phase 3 milestones.

Proceeds from the 2013, 2012, and 2011 exercises amounted to $956 thousand, $30 thousand, and $980 thousand, respectively. The intrinsic value of these options amounted to $1.4 million, $11 thousand and $2.5 million for years ended December 31, 2013, 2012 and 2011, respectively.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

12. Stock Option Plan (Continued)

Transactions under the Plan for the years ending December 31, 2013, 2012, and 2011 were as follows:

(in thousands, except share and per share data)	Number of Shares	Weighted-Average Exercise Price	Weighted-Average Contractual Term (Years)	Aggregate Intrinsic Value
Outstanding, December 31, 2010	4,566,935	$ 2.82		
Granted	1,894,300	5.65		
Exercised	(479,666)	2.04		
Cancelled	(843,083)	5.01		
Outstanding, December 31, 2011	5,138,486	4.08		
Granted	2,309,650	4.36		
Exercised	(8,300)	3.61		
Cancelled	(292,533)	5.70		
Outstanding, December 31, 2012	7,147,303	4.11		
Granted	2,649,900	3.28		
Exercised	(570,168)	1.68		
Cancelled	(2,479,732)	4.58		
Outstanding, December 31, 2013	6,747,303	$ 3.81	7.17	$ 5,339
Vested and unvested expected to vest at December 31, 2013	6,711,969	$ 4.01	5.03	$ 5,311
Options exercisable, December 31, 2013	3,471,935	$ 4.01	5.03	$ 2,654
Options exercisable, December 31, 2012	3,683,786	$ 3.56	5.28	$ 3,972
Options available for future grant	416,964			

At December 31, 2013, total unrecognized compensation costs related to non-vested stock options outstanding amounted to $8.5 million. The cost is expected to be recognized over a weighted-average period of 1.84 years.

Restricted Stock

In December 2013, the Company issued 75,272 shares of restricted stock to its non-employee directors, which vested in their entirety on the one year anniversary of the grant date. In January, February and May 2012, the Company issued 101,500, 43,802 and 25,000 shares of restricted stock to employees, which vested ratably in annual installments over three years, respectively, commencing on the first anniversary of the grant date. In December 2012, the Company also issued 87,730 shares of restricted stock to its non-employee directors, which vested ratably in annual installments over three years, commencing on the first anniversary of the grant date. In July and December 2011, the Company issued 50,000 and 720,675 shares of restricted stock to employees, which vested ratably in annual installments over three years, respectively, commencing on the first anniversary of the grant date. In January and December 2011, the Company also issued 25,000 and 52,731 shares of restricted stock to its non-employee directors, which vested in their entirety on the one year anniversary of the grant date and ratably in annual installments over three years, respectively, commencing on the first anniversary of the grant date. In March and April 2010, the Company issued 90,000 and 25,000 shares of restricted stock to its non-employee directors, respectively, all of which vested in their entirety on the one year anniversary of the grant date. In December 2009, the Company issued 347,500 shares of restricted stock to employees and 45,000 shares

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

12. Stock Option Plan (Continued)

of restricted stock to its non-employee directors, which vested ratably in annual installments over three and two years, respectively, commencing on the first anniversary of the grant date. In September 2009, the Company issued 828,000 shares of restricted stock to employees and 180,000 shares of restricted stock to its board of directors, all of which vested in their entireties on the one year anniversary of the grant date. In December 2008, the Company issued 396,500 shares of restricted stock to employees and 90,000 shares of restricted stock to its board of directors, all of which vested in December 2009. Also, in January 2008, the Company issued 100,000 shares of restricted stock to one employee which vested ratably over a three-year period. In 2007, the Company issued 70,000 shares of restricted stock to several employees which vested in December 2008. During the years ended December 31, 2013, 2012 and 2011, $1.2 million, $1.7 million, and $635 thousand of compensation expense was recognized, respectively.

In January, March, May and December 2013, the Company repurchased 52,018, 5,400, 2,623, and 56,683 shares at average prices of $4.28, $4.50, $1.65 and $4.37 per share, respectively, to cover payroll taxes. In July and December 2012, the Company repurchased 15,740 and 107,413 shares at $6.06 and $4.19 per share, respectively, to cover payroll taxes. In January and December 2011, the Company repurchased 15,190 shares and 44,369 shares at $5.14 and $4.41 per share, respectively, to cover payroll taxes. In January, September and December 2010, the Company repurchased 15,283 shares, 349,710 shares and 51,116 shares at $3.10, $3.95 and $4.66 per share, respectively, to cover payroll taxes. In December 2009, the Company repurchased 103,823 shares of vested restricted stock from employees at $3.66 per share to cover payroll taxes. A summary of the status of non-vested restricted stock as of December 31, 2013, 2012 and 2011 is as follows:

	Number of Shares	Weighted-Average Grant Date Fair Value
Non-vested, December 31, 2010	348,753	$ 2.30
Granted	848,406	4.52
Vested	(229,586)	3.56
Cancelled	(16,667)	2.85
Non-vested, December 31, 2011	950,906	4.34
Granted	258,032	4.39
Vested	(351,829)	4.32
Cancelled	(123,370)	4.34
Non-vested, December 31, 2012	733,739	4.37
Granted	75,272	4.34
Vested	(292,399)	4.31
Cancelled	(163,747)	4.42

Non-vested, December 31, 2013	352,865	$	4.38

As of December 31, 2013, there was $1.3 million of total unrecognized stock-based compensation expense related to non-vested restricted stock arrangements. The expense is expected to be recognized over a weighted-average period of 1.45 years.

13. Employee Benefit Plan

The Company sponsors a qualified 401(k) Retirement Plan under which employees are allowed to contribute certain percentages of their pay, up to the maximum allowed under Section 401(k) of the IIRC. The Company may make contributions to this plan at its discretion. The Company contributed approximately $139 thousand, $266 thousand, and $38 thousand to this plan during the years ended December 31, 2013, 2012, and 2011, respectively.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

14. Selected Quarterly Information (Unaudited)
(in thousands, except per share amount)

Year Ended December 31, 2013	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Revenue	$ 200	$ 200	$ 200	$ 200
Total operating expenses	23,783	18,496	9,315	6,919
Loss from operations	(23,583)	(18,296)	(9,115)	(6,719)
Change in fair value of warrants	10,788	(403)	(7,407)	(1,793)
Net (loss)	(12,799)	(18,692)	(16,713)	(8,903)
Loss per share, basic and diluted	$ (0.15)	$ (0.22)	$ (0.20)	$ (0.09)

Year Ended December 31, 2012	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Revenue	$ 200	$ 200	$ 200	$ 200
Total operating expenses	18,833	23,166	21,927	39,043
Loss from operations	(18,633)	(22,966)	(21,727)	(38,843)
Change in fair value of warrants	(5,811)	(650)	3,945	8,566
Net (loss)	(24,470)	(23,613)	(17,824)	(30,225)
Loss per share, basic and diluted	$ (0.32)	$ (0.30)	$ (0.23)	$ (0.37)

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Exhibit No.	Description of Document
2.1	Agreement and Plan of Merger among the Registrant (formerly EasyWeb, Inc.), ZIO Acquisition Corp. and ZIOPHARM, Inc., dated August 3, 2005 (incorporated by reference to Exhibit 10.1 to the Registrant s Form 8-K, SEC File No. 000-32353, filed August 9, 2005).
3.1	Amended and Restated Certificate of Incorporation, as filed with the Delaware Secretary of State on April 26, 2006 (incorporated by reference to Exhibit 3.1 to the Registrant s Current Report on Form 8-K, SEC File No. 000-32353, filed April 26, 2006).
3.2	Certificate of Merger dated September 13, 2005, relating to the merger of ZIO Acquisition Corp. with and into ZIOPHARM, Inc. (incorporated by reference to Exhibit 3.1 to the Registrant s Form 8-K, SEC File No. 000-32353, filed September 19, 2005).
3.3	Certificate of Ownership of the Registrant (formerly EasyWeb, Inc.) dated as of September 14, 2005, relating the merger of ZIOPHARM, Inc. with and into the Registrant, and changing the Registrant s corporate name from EasyWeb, Inc. to ZIOPHARM Oncology, Inc. (incorporated by reference to Exhibit 3.2 to the Registrant s Form 8-K, SEC File No. 000-32353, filed September 19, 2005).
3.4	Bylaws, as amended to date (incorporated by reference to Exhibit 3.3 to the Registrant s Form 8-K, SEC File No. 000-32353, filed September 19, 2005).
4.1	Specimen common stock certificate (incorporated by reference to Exhibit 4.1 to the Registrant s Registration Statement on Form SB-2, SEC File No. 333-129020, filed October 14, 2005).
4.2	Form of Warrant issued to placement agents in connection with ZIOPHARM, Inc. 2005 private placement (incorporated by reference to Exhibit 4.2 to the Registrant s Registration Statement on Form SB-2, SEC File No. 333-129020, filed October 14, 2005).
4.3	Schedule identifying holders of Warrants in the form filed as Exhibit 4.2 to this Report (incorporated by reference to Exhibit 4.3 to the Registrant s Registration Statement on Form SB-2, SEC File No. 333-129020, filed October 14, 2005).
4.4	Warrant for the Purchase of Shares of common stock dated December 23, 2004 (incorporated by reference to Exhibit 4.4 to the Registrant s Registration Statement on Form SB-2, SEC File No. 333-129020, filed October 14, 2005).
4.5	Option for the Purchase of common stock dated October 15, 2004 and issued to DEKK-Tec, Inc. (incorporated by reference to Exhibit 4.5 to the Registrant s Annual Report on Form 10-KSB, SEC File No. 000-32353, filed March 20, 2006).
4.6	Form of Option for the Purchase of Shares of common stock dated August 30, 2004 and issued to The University of Texas M. D. Anderson Cancer Center (incorporated by reference to Exhibit 4.6 to the Registrant s Annual Report on Form 10-KSB, SEC File No. 000-32353, filed March 20, 2006).
4.7	Schedule identifying material terms of Options for the Purchase of Shares of common stock in the form filed as Exhibit 4.6 to this Report. (incorporated by reference to Exhibit 4.7 to the Registrant s Annual Report on Form 10-KSB, SEC File No. 000-32353, filed March 20, 2006).

4.8	Form of common stock Purchase Warrant issued to placement agents in connection with the Registrant s 2006 private placement (incorporated by reference to Exhibit 4.2 to the Registrant s Current Report on Form 8-K, SEC File No. 000-32353, filed May 3, 2006).

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Exhibit No.	Description of Document
4.9	Form of Warrant to Purchase Common Stock issued to investors in connection the Registrant s September 2009 private placement (incorporated by reference to Exhibit 4.1 to the Registrant s Current Report on Form 8-K filed September 15, 2009).
4.10	Form of Warrant to Purchase Common Stock issued to placement agents in connection with the Registrant s September 2009 private placement (incorporated by reference to Exhibit 4.2 to the Registrant s Current Report on Form 8-K filed September 15, 2009).
4.11	Form of Warrant to Purchase Common Stock issued to investors in connection with the Registrant s December 2009 public offering (incorporated by reference to Exhibit 4.1 to the Registrant s Current Report on Form 8-K filed December 8, 2009).
4.12	Form of Warrant to Purchase Common Stock issued to underwriters in connection with the Registrant s December 2009 public offering (incorporated by reference to Exhibit 4.1 to the Registrant s Current Report on Form 8-K filed December 8, 2009).
10.1	ZIOPHARM Oncology, Inc. Amended and Restated 2003 Stock Incentive Plan (incorporated by reference to Exhibit 10.1 to the Registrant s Annual Report on Form 10-K filed March 1, 2011).
10.2	Form of Incentive Stock Option Agreement granted under the Registrant s 2003 Stock Option Plan (incorporated by reference to Exhibit 10.7 to the Registrant s Annual Report on Form 10-KSB, SEC File No. 000-32353, filed March 20, 2006).
10.3	Form of Employee Non-Qualified Stock Option Agreement granted under the Registrant s 2003 Stock Option Plan (incorporated by reference to Exhibit 10.8 to the Registrant s Annual Report on Form 10-KSB, SEC File No. 000-32353, filed March 20, 2006).
10.4	Form of Director Non-Qualified Stock Option Agreement granted under the Registrant s 2003 Stock Option Plan (incorporated by reference to Exhibit 10.9 to the Registrant s Annual Report on Form 10-KSB, SEC File No. 000-32353, filed March 20, 2006).
10.5	Form of Restricted Stock Agreement granted under the Registrant s 2003 Stock Option Plan (incorporated by reference to Exhibit 10.1 to the Registrant s Current Report on Form 8-K filed December 18, 2007).
10.6	ZIOPHARM Oncology, Inc. 2012 Equity Incentive Plan (incorporated by reference to Exhibit 10.1 to the Registrant s Current Report on Form 8-K filed June 26, 2012).
10.7	Form of Restricted Stock Agreement Granted Under the ZIOPHARM Oncology, Inc. 2012 Equity Incentive Plan (incorporated by reference to Exhibit 10.2 to the Registrant s Current Report on Form 8-K filed June 26, 2012).
10.8	Form of Option Agreement Granted Under the ZIOPHARM Oncology, Inc. 2012 Equity Incentive Plan (incorporated by reference to Exhibit 10.3 to the Registrant s Current Report on Form 8-K filed June 26, 2012).
10.9	Employment Agreement dated as of January 8, 2008 by and between the Registrant and Dr. Jonathan Lewis (incorporated by reference to Exhibit 10.6 to the Registrant s Annual Report on Form 10-KSB filed February 21, 2008).
10.10	Extension of Employment Agreement dated as of December 28, 2010 by and between the Registrant and Dr. Jonathan Lewis (incorporated by reference to Exhibit 10.1 to the Registrant s Current Report on Form 8-K filed December 28, 2010).

10.11	Extension of Employment Agreement dated as of January 8, 2013 by and between the Registrant and Dr. Jonathan Lewis (incorporated by reference to Exhibit 10.1 to the Registrant s Current Report on Form 8-K filed January 8, 2013).
10.12	Amendment and Extension to Employment Agreement dated January 8, 2014 by and between ZIOPHARM Oncology, Inc. and Jonathan Lewis, M.D., Ph.D. (incorporated by reference to Exhibit 10.1 to the Registrant s Current Report on Form 8-K filed January 8, 2014).

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Exhibit No.	Description of Document
10.13	Employment Agreement dated July 8, 2011 by and between ZIOPHARM Oncology, Inc. and Hagop Youssoufian, MD, MSc (incorporated by reference to Exhibit 10.1 to the Registrant s Current Report on 8-K filed July 15, 2011).
10.14	Amendment No. 1 to Employment Agreement dated July 8, 2011 by and between the Company and Hagop Youssoufian, M.D., M.Sc. (incorporated by reference to Exhibit 10.1 to the Company s Current Report on Form 8-K filed April 3, 2012).
10.15	Employment Agreement effective September 6, 2011 by and between ZIOPHARM Oncology, Inc. and Caesar J. Belbel (incorporated by reference to Exhibit 10.1 to the Registrant s Current Report on Form 8-K filed September 6, 2011).
10.16	Amendment to Employment Agreement dated January 7, 2014 by and between ZIOPHARM Oncology, Inc. and Caesar J. Belbel (incorporated by reference to Exhibit 10.2 to the Registrant s Current Report on Form 8-K filed January 8, 2014).
10.17	Employment Agreement dated May 8, 2012 by and between the Company and Jason A. Amello (incorporated by reference to Exhibit 10.1 to the Registrant s Current Report on Form 8-K filed May 10, 2012).
10.18	Patent and Technology License Agreement dated August 24, 2004, among ZIOPHARM, Inc. (predecessor to the Registrant), the Board of Regents of the University of Texas System on behalf of the University of Texas M.D. Anderson Cancer Center and the Texas A&M University System (incorporated by reference to Exhibit 10.5 to the Registrant s Registration Statement on Form SB-2, SEC File No. 333-129020, filed October 14, 2005). +
10.19	License Agreement dated October 15, 2004, between ZIOPHARM, Inc. (predecessor to the Registrant) and DEKK-Tec, Inc. (incorporated by reference to Exhibit 10.6 to the Registrant s Registration Statement on Form SB-2, SEC File No. 333-129020, filed October 14, 2005). +
10.20	Asset Purchase Agreement dated November 3, 2006 by and among Baxter Healthcare S.A., Baxter International, Inc., Baxter Oncology GmbH and the Registrant (incorporated by reference to Exhibit 10.1 to the Registrant s Quarterly Report on Form 10-QSB, SEC File No. 001-33038, filed November 13, 2006). +
10.21	License Agreement dated November 3, 2006 by and among Baxter Healthcare S.A., Baxter International, Inc. and the Registrant (incorporated by reference to Exhibit 10.1 to the Registrant s Quarterly Report on Form 10-QSB, SEC File No. 001-33038, filed November 13, 2006). +
10.22	Amendment to License Agreement dated September 24, 2009 by and among Baxter Healthcare S.A., Baxter International, Inc. and the Registrant (incorporated by reference to Exhibit 10.16 to the Registrant s Annual Report on Form 10-K filed March 17, 2010).
10.23	Exclusive Channel Partner Agreement by and between the Registrant and Intrexon Corporation dated as of January 6, 2011 (incorporated by reference to Exhibit 10.1 to the Registrant s Current Report on Form 8-K filed January 12, 2011). +
10.24	First Amendment to Exclusive Channel Partner Agreement dated September 13, 2011 by and between the Registrant and Intrexon Corporation (incorporated by reference to Exhibit 10.1 to the Registrant s Quarterly Report on Form 10-Q filed May 3, 2012)
10.25	Form of subscription agreement between the ZIOPHARM, Inc. and the investors in the Registrant s 2005 private placement (incorporated by reference to Exhibit 10.7 to the Registrant s Registration

Statement on Form SB-2, SEC File No. 333-129020, filed October 14, 2005).

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Exhibit No.	Description of Document
10.26	Form of Subscription Agreement by and between the Registrant and investors in the Registrant s 2006 private placement (incorporated by reference to Exhibit 10.1 to the Registrant s Current Report on Form 8-K, SEC File No. 000-32353, filed May 3, 2006).
10.27	Form of Securities Purchase Agreement dated September 9, 2009 by and between the Registrant and investors in the Registrant s September 2009 private placement (incorporated by reference to Exhibit 10.1 to the Registrant s Current Report on Form 8-K filed September 15, 2009).
10.28	Form of Registration Rights Agreement dated September 9, 2009 by and between the Registrant and investors in the Registrant s September 2009 private placement (incorporated by reference to Exhibit 10.2 to the Registrant s Current Report on Form 8-K filed September 15, 2009).
10.29	Engagement Letter dated August 7, 2009 by and between the Registrant and Rodman & Renshaw, LLC (incorporated by reference to Exhibit 10.21 to the Registrant s Annual Report on Form 10-K filed March 1, 2011).
10.30	Stock Purchase Agreement by and between the Registrant and Intrexon Corporation dated as of January 6, 2011 (incorporated by reference to Exhibit 10.2 to the Registrant s Current Report on Form 8-K filed January 12, 2011).
10.31	Amendment Stock Purchase Agreement by and between the Registrant and Intrexon Corporation dated as of February 1, 2011 (incorporated by reference to Exhibit 10.1 to the Registrant s Current Report on Form 8-K filed February 7, 2011).
10.32	Registration Rights Agreement dated January 12, 2011 by and between the Registrant and Intrexon Corporation (incorporated by reference to Exhibit 10.24 to the Registrant s Annual Report on Form 10-K filed March 1, 2011).
10.33	Form of Indemnity Agreement for directors and executive officers (incorporated by reference to Exhibit 99.1 to the Registrant s Current Report on Form 8-K filed January 31, 2013).
23.1	Consent of Independent Registered Public Accounting Firm McGladrey LLP
31.1	Certification of Chief Executive Officer pursuant to Exchange Act Rule 13a-14(a) or 15(d)-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of Chief Accounting Officer pursuant to Exchange Act Rule 13a-14(a) or 15(d)-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
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.
32.2	Certification of Chief Accounting Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

+ Confidential treatment has been granted as to certain portions of this exhibit pursuant to Rule 406 of the Securities Act of 1933, as amended, or Rule 24b-2 of the Securities Exchange Act of 1934, as amended.