ZIOPHARM ONCOLOGY INC

FORM 10-K
(Annual Report)

Filed 03/01/11 for the Period Ending 12/31/10

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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

FORM 10-K

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

For the fiscal year ended December 31, 2010

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 Incorporation or Organization)	(IRS Employer Identification No.)
1180 Avenue of the Americas, 19th Floor, New York, NY	**10036**
(Address of Principal Executive Offices)	(Zip Code)

(646) 214-0700

(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 ☒

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. ☐

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 ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12

months (or for such shorter period that the registrant was required to submit and post such files). Yes ☐ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will 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," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large Accelerated Filer ☐ Accelerated Filer ☐ Non- Accelerated Filer ☐ Smaller Reporting Company ☒

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

The aggregate market value of the registrant's common stock held by non-affiliates was $119,180,568 as of June 30, 2010 (the last business day of the registrant's most recently completed second fiscal quarter), based upon the closing price of the registrant's common stock as reported on the NASDAQ Capital Market on that date. Shares of common stock held by each executive officer and director of the registrant and by each entity that owns 10% or more of the registrant's outstanding common stock have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

As of February 25, 2011, there were 65,753,629 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 2011 annual meeting of stockholders, which is to be filed within 120 days after the end of the fiscal year ended December 31, 2010, are incorporated by reference into Part III of this Form 10-K, to the extent described in Part III.

ZIOPHARM Oncology, Inc.
(a development stage enterprise)

FORM 10-K
FOR THE FISCAL YEAR ENDED DECEMBER 31, 2010

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PART I

Item 1. Business

General

ZIOPHARM Oncology, Inc. is a biopharmaceutical company that is seeking to develop and commercialize a diverse portfolio of in-licensed cancer drugs that can address unmet medical needs. Our principal focus has been on the licensing and development of proprietary small molecule drug candidates that are related to cancer therapeutics already on the market or in development and that can be administered by intravenous ("IV") and/or oral dosing. Our clinical programs for our small molecule candidates include palifosfamide (Zymafos ^{TM} or ZIO-201) darinaparsin (Zinapar ^{TM} or ZIO-101) and indibulin (Zybulin ^{TM} or ZIO-301). Pursuant to a partnering arrangement with Intrexon Corporation, we are also now developing novel DNA-based biotherapeutics. Under the arrangement, we obtained rights to Intrexon's effector platform for use in the field of oncology, including with respect to two existing product candidates of Intrexon. The first lead product, INXN 3001/1001, is currently in a Phase Ib study (that we are now conducting/sponsoring) and we expect to submit an Investigational New Drug ("IND") application to the Food and Drug Administration ("FDA") with respect to the second, INXN 2001/1001, during the first half of 2011. We plan to leverage Intrexon's synthetic biology platform to develop products to stimulate key pathways used by the body's immune system to inhibit the growth and metastasis of cancers, adding significantly to our small molecule drug development portfolio utilizing our global capabilities to translate science to the patient.

We believe that our strategy will result in expedited drug development programs with product candidates having a low cost of manufacturing to address changing reimbursement requirements around the world. We are currently in Phase I, II, and/or Phase III studies for our product candidates with a particular emphasis on completing a global palifosfamide pivotal Phase III trial to support registration in combination with doxorubicin in the front-line setting of soft tissue sarcoma.

More detailed descriptions of palifosfamide, darinaparsin and indibulin, INXN 3001/1001 and INXN 2001/1001, and our clinical development plans for each, are set forth in this report under the caption "Business — Product Candidates."

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. Following reincorporation in Delaware in May 2005 under the same name, we completed a "reverse" acquisition of privately held ZIOPHARM, Inc., a Delaware corporation on September 13, 2005. 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 SEC and the historical financial statements of ZIOPHARM, Inc. became our historical financial statements.

Our executive offices are located at 1180 Avenue of the Americas, 19 th Floor, New York, NY 10036, and our telephone number is (646) 214-0700. Our internet site is *www.ziopharm.com* . None of the information on our internet site is part of this report.

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 one of every two American men and 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 sarcomas arise in soft tissue. Cancers are considered metastatic if they spread via 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 Cancer Statistics 2010 (published by the American Cancer Society in Cancer Facts & Figures 2011), it was estimated that 569,490 Americans would die from cancer in 2010 — more than 1,500 each day. The cost of treating cancer is significant. The National Institute of Health estimates that the overall cost of cancer in 2008 was $263.8 billion. This cost included an estimate of $102.8 billion in direct medical expenses and $160.9 billion in indirect mortality costs.

Cancer Treatments

Major treatments for cancer include surgery, radiotherapy, and chemotherapy; the latter including newer approaches generally referred to as anti-angiogenic, vascular disruption or targeted therapies. Also associated with the treatment of cancer is supportive care. 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.

Cytotoxics : Cytotoxics are anticancer 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 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.

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 antitumor activity by the drug, but instead the result of empirical clinical trials.

Immunological and DNA-based approaches : With the approval of Dendreon's PROVENGE® for prostate cancer, an immune based approach to treating cancer has been validated and a number of additional strategies that are DNA-based, including the approach by Intrexon Corporation, are in clinical progress, opening up a very promising new avenue to treat cancer.

Supportive Care : The treatment of a cancer may include the use of chemotherapy, radiation therapy, biologic response modifiers, surgery, or some combination of all of these or other therapeutic options. All of these treatment options 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

ZIO-101, Darinaparsin, Zinapar ™

General . Darinaparsin is an anti-mitochondrial (organic arsenic) compound covered by issued patents and pending patent applications in the U.S. and in foreign countries. A form of commercially available inorganic arsenic (arsenic trioxide [Trisenox®] or "ATO") has been approved in the United States, the European Union and Japan for the treatment of acute promyelocytic leukemia, a precancerous condition. In the United States, ATO is on the compendia listing for the therapy of multiple myeloma, and has been studied for the treatment of various other cancers. Nevertheless, ATO has been shown to be toxic to the heart, liver, and brain, which limits its use as an anti-cancer agent. ATO carries a "black box" warning for ECG abnormalities since arsenic trioxide has been shown to cause QT interval prolongation and complete atrioventricular block. QT prolongation can lead to a *torsade de pointes* -type ventricular arrhythmia, which can be fatal. Inorganic arsenic has also been shown to cause cancer of the skin and lung in humans. The toxicity of arsenic is generally correlated to its accumulation in organs and tissues. Our preclinical and clinical studies to date have demonstrated that darinaparsin is considerably less toxic than ATO, particularly with regard to cardiac toxicity.

In vitro testing of darinaparsin using the National Cancer Institute's human cancer cell panel demonstrated activity against a series of tumor cell lines including lung, colon, brain, melanoma, ovarian, and kidney cancer. Moderate activity was shown against breast and prostate cancer tumor cell lines. In addition to solid tumors, *in vitro* testing in both the National Cancer Institute's cancer cell panel and in vivo testing in a leukemia animal model demonstrated substantial activity against hematological cancers (cancers of the blood and blood-forming tissues) such as leukemia, lymphoma, myelodysplastic syndromes, and multiple myeloma. Results indicate significant activity against the HuT 78 cutaneous T-cell lymphoma, the NK-G2MI natural killer-cell NHL, KARPAS-299 T-cell NHL, SU-DHL-8 B-cell NHL, SU-DHL-10 B-cell NHL and SU-DHL-16 B-cell NHL cell lines. Preclinical studies have also established anti-angiogenic properties of darinaparsin, provided support for the development of an oral form of the drug, and established synergy of darinaparsin in combination with other approved anti-cancer agents.

Potential Lead Indication: Lymphoma . Three Phase II intravenous studies of IV darinaparsin evaluating hematological malignancies, myeloma and liver cancer, have been completed and data from these trials has been reported, the most promising being in lymphomas and particularly in peripheral T-cell lymphoma.

Clinical Development Plan for darinaparsin : Phase I testing of the intravenous (IV) form of darinaparsin in solid tumors and hematological cancers was completed and we reported clinical activity and, importantly, a safety profile from these studies as predicted by preclinical results. We subsequently completed Phase II studies in advanced myeloma, primary liver cancer and in certain other hematological cancers. At the May 2009 annual meeting of the American Society of Clinical Oncology ("ASCO"), we reported favorable results from the trial with IV-administered darinaparsin in lymphoma, particularly peripheral T-cell lymphoma. We have initiated a Phase I study of darinaparsin with the combination treatment regimen called "CHOP", which is standard of care for front-line peripheral T-cell lymphoma ("PTCL"), as a basis to address the front-line setting of PTCL. Subject to FDA review, we presently plan to initiate a two-stage potentially pivotal trial likely in certain relapsed patients later this year. A Phase I trial for an oral form of darinaparsin is currently in progress and, upon completion, we anticipate conducting a Phase II study in solid tumors that would build upon recently reported preclinical work in which darinaparsin had a significant cytotoxic and radiosensitizing effect against different cancer cells under both normal and hypoxic conditions.

We have obtained Orphan Drug Designation for darinaparsin in the United States for the treatment of PTCL and have received a positive recommendation from the Committee for Orphan Medicinal Products (COMP) within the European Medicines Agency (EMA) for designation as an orphan medicinal product for the same indication.

ZIO-201, Palifosfamide, Zymafos ™

General . Palifosfamide, or isophosphoramide mustard ("IPM"), is a proprietary active metabolite of the pro-drug ifosfamide. Ifosfamide, like the related drugs cyclophosphamide and bendamustine, is a DNA alkylating agent, which is a form of cancer therapy to treat a wide range of solid tumors and hematological malignancies. We believe that cyclophosphamide is the most widely used alkylating agent in cancer therapy, with significant use in the treatment of breast cancer and non-Hodgkin's lymphoma. Bendamustine has been recently approved and successfully launched by Cephalon Oncology in the U.S. and Europe to treat certain hematological malignancies. Ifosfamide has been shown to be effective in the treatment of sarcoma and lymphoma, either by itself or in combination with other anticancer agents. Ifosfamide is approved by the FDA as a treatment for testicular cancer while ifosfamide-based treatment is a standard of care for sarcoma, although it is not approved for this indication by the FDA.

Our preclinical studies have shown that, in animal and laboratory models, palifosfamide evidences activity against leukemia and solid tumors. These studies also indicate that palifosfamide may have a better safety profile than ifosfamide or cyclophosphamide because it does not appear to produce known toxic metabolites of ifosfamide, such as acrolein and chloroacetaldehyde. Acrolein, which is toxic to the kidneys and bladder, can mandate the administration of a protective agent called mesna, which is inconvenient and expensive. Chloroacetaldehyde is toxic to the central nervous system, causing "fuzzy brain" syndrome for which there is currently no protective measure. Similar toxicity concerns pertain to high-dose cyclophosphamide, which is widely used in bone marrow and blood cell transplantation. Because palifosfamide is the active metabolite — without acrolein or chloroacetaldehyde metabolites — we believe that the administration of palifosfamide (without the administration of mesna) may avoid many of the toxicities of ifosfamide without compromising efficacy.

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. Moreover, in some preclinical studies, palifosfamide has evidenced activity against ifosfamide- and/or cyclophosphamide-resistant cancer cell lines. Also in preclinical cancer models, palifosfamide was shown to be orally active and encouraging results have been obtained with palifosfamide in combination with doxorubicin, an agent approved to treat sarcoma.

Lead Indications for palifosfamide: Sarcoma . Sarcomas are cancers of the bone, cartilage, fat, muscle, blood vessels, or other connective or supportive tissue. There are more than 50 histological or tissue types of soft tissue sarcomas but with considerable homogeneity when the disease is metastatic. The prognosis for patients with soft tissue sarcoma depends on several factors, including the patient's age, size of the primary tumor, histological grade, and stage of the tumor. Factors associated with a poorer prognosis include being older than 60 years of age, having tumors larger than five centimeters, and having tumors of high-grade histology. While small, low-grade tumors are usually curable by surgery alone, the higher-grade or larger sarcomas are associated with higher local treatment failure rates and increased metastatic potential.

Intravenous palifosfamide may be a useful agent that, either alone or in combination with other agents and doxorubicin in particular, may deliver therapeutic activity with fewer side effects of the type that have been associated with ifosfamide. In the United States, ifosfamide is regularly included in combination regimens for the treatment of sarcomas, testicular cancers, head and neck cancer, certain types of non-Hodgkin's lymphomas, and other solid tumors including small-cell lung cancer ("SCLC"), although it is not formally approved by FDA for the treatment of soft tissue sarcoma. Doxorubicin, approved decades ago, is the only FDA-approved treatment for sarcoma. The Company believes that palifosfamide in combination with doxorubicin may be more effective than doxorubicin alone and with a far improved safety profile over the combination of ifosfamide use with doxorubicin.

Small-Cell Lung Cancer . SCLC is almost exclusively associated with smoking. Similar to sarcoma, 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. An oral form of administration, for STS or SCLC as well as other solid tumors, could also offer a significant advancement to current therapy.

Clinical Development Plan for palifosfamide . Following completion of Phase I study, we completed Phase II testing of the intravenous form of palifosfamide as a single agent to treat advanced sarcoma. In both Phase I and Phase II testing, palifosfamide has been administered without the "uroprotectant" mesna, and the toxicities associated with acrolein and chloroacetaldehyde have not been observed. We reported clinical activity of palifosfamide when used alone in the Phase II study addressing advanced sarcoma. Following review of preclinical combination studies, clinical data, and discussion with sarcoma experts, we initiated a Phase I dose escalation study of palifosfamide in combination with doxorubicin primarily in patients with soft tissue sarcoma. We reported favorable results and safety profile from this study at ASCO's 2009 annual meeting. In light of reported favorable Phase II clinical activity data and with the combination being well tolerated in the Phase I trial, we initiated a Phase II randomized controlled trial ("PICASSO") in the second half of 2008 to compare doxorubicin plus palifosfamide to doxorubicin alone in patients with front- and second-line metastatic or unresectable soft tissue sarcoma. The study generated positive top line interim data in 2009. Upon successfully reaching a pre-specified efficacy milestone and following safety and efficacy data review by the Data Committee, sarcoma experts, and our Medical Advisory Board, we elected to suspend enrollment in the trial in October 2009. We subsequently presented further positive interim data from the trial at the 15 th Annual Connective Tissue Oncology Society meeting held in November 2009 and again at the 2010 ASCO annual meeting in June 2010, where the presentation was also selected for "Best of ASCO." In July 2010, we announced the initiation of a worldwide registration trial on a protocol design developed through a FDA End of Phase II meeting and the Special Protocol Assessment (SPA) process. Although we did engage in the SPA process, we, with guidance from the FDA, elected to initiate the trial without having obtained SPA agreement from the FDA. The Phase III trial is in front-line metastatic soft tissue sarcoma, entitled PICASSO 3, and is an international, randomized, double-blinded, placebo-controlled trial with a targeted enrollment of 424 patients. The study is designed to evaluate the safety and efficacy of palifosfamide administered with doxorubicin compared with doxorubicin administered with placebo, with no cross-over between the arms. Progression-free survival is the primary endpoint for accelerated approval, with overall survival as the primary endpoint for full approval. Orphan Drug Designation for palifosfamide has been obtained in both the United States and the European Union for the treatment of soft tissue sarcomas. As an orphan designated indication, the patient population available for participation in the PICASSO 3 trial is generally limited. To date, we have experienced slower than anticipated enrollment in the PICASSO 3 trial and have recently taken steps to accelerate patient enrollment and address shortages of doxorubicin, a drug that is necessary for conduct of the trial.

We have also initiated a Phase I trial with palifosfamide in combination with etoposide and carboplatin to determine appropriate safety for initiating a subsequent randomized trial in front-line small-cell lung cancer ("SCLC"). An oral form of palifosfamide has been the subject of preclinical studies necessary for an Investigational New Drug ("IND") application to support commencing Phase I study. Based on an initial review, FDA has requested, among other things, that we repeat a study in order to support the current protocol, a request under review by the Company. Accordingly, commencement of the study will be delayed pending resolution. We had previously expected that oral palifosfamide would enter Phase I study in the first quarter of 2011.

ZIO-301, Indibulin, Zybulin ™

General. Indibulin is a novel, orally available small molecular-weight inhibitor of tubulin polymerization that we acquired from Baxter Healthcare in 2006 and is the subject of numerous patents worldwide, including the United States, the European Union and Japan. The microtubule component, tubulin, is one of the more well established drug targets in cancer. Microtubule inhibitors interfere with the dynamics of tubulin polymerization, resulting in inhibition of chromosome segregation during mitosis and consequently inhibition of cell division. A number of marketed IV anticancer drugs target tubulin, such as the taxane family members, paclitaxel (Taxol®), docetaxel (Taxotere®), the Vinca alkaloid family members, vincristine and vinorelbine, and new classes of tubulin inhibitors including the epothilones. This class of agents is typically the mainstay of therapy in a wide variety of indications. In spite of their effectiveness, the use of these drugs is associated with significant toxicities, notably peripheral neurotoxicity.

Preclinical studies with indibulin demonstrate significant and broad antitumor activity, including activity against taxane-refractory cell lines. The cytotoxic activity of indibulin was demonstrated in several rodent and human tumor cell lines derived from prostate, brain, breast, pancreas, lung, ovary, and cervical tumor tissues and in rodent tumor and human tumor xenograft models. In addition, indibulin was effective against multidrug resistant tumor cell lines (breast, lung, and leukemia) both in vitro and in vivo. Indibulin is potentially safer than other tubulin inhibitors. No neurotoxicity has been observed at therapeutic doses in rodents and in the Phase I trials. Indibulin has also demonstrated synergy with approved anti-cancer agents in preclinical studies. The availability of an oral formulation of indibulin creates significant commercial opportunity because no oral capsule formulations of the taxane family are currently on the market in the United States. 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. Indibulin binding causes destabilization of microtubules *in vitro* , an effect similar to that of the vinca alkaloid family or colchicine, but opposite to that of paclitaxel and related drugs and different from the epothilones.

Testing of indibulin for *in vitro* growth inhibitory activity against a panel of human and rodent tumor-derived cell lines revealed that the drug candidate is active in a broad spectrum of cell lines derived from different organs. *In vivo* , indibulin is active in a number of xenograft and rodent tumor models. Its unique pharmacodynamic properties demonstrated in preclinical studies, as well as an excellent safety profile observed thus far in ongoing Phase I studies, warrant further evaluation in the clinic.

Clinical Development Plan for Indibulin . Indibulin, as a single agent, has completed a Phase I study in patients with advanced solid tumors. We have reported clinical activity at well-tolerated doses using a continuous dosing scheme without the development of clinically relevant peripheral neuropathy. Following encouraging results obtained with indibulin in combination with erlotinib, and 5-FU in preclinical models, two Phase I combination studies were initiated with Tarceva ™ and Xeloda ™ , respectively. Favorable activity and safety profile of oral indibulin with oral Xeloda ™ were reported at ASCO's annual meeting in May 2009. Preclinical work with our consultant, Dr. Larry Norton, to explore dose scheduling for the clinical setting have been completed, with results supporting the recently initiated Phase I safety trial necessary for a Phase II breast cancer trial and using the mathematical dosing schedule established preclinically. We have recently modified the dosage form to be able to administer a smaller number of capsules and expect to substitute the new dosage form into our ongoing Phase I trial in the first quarter of this year.

INXN 3001/1001 (or DC-RTS-IL-12) and INXN 2001/1001 (or Ad-RTS-IL-12)

General . On January 6, 2011, we entered into an Exclusive Channel Partner Agreement with Intrexon Corporation pursuant to which we plan to supplement our small molecule drug development efforts by pursuing the development and commercialization of novel DNA-based therapeutics in the field of cancer treatment using Intrexon's Rheoswitch® and UltraVector® synthetic biology technologies. The channel partnering arrangement contemplates our using Intrexon's technology directed towards *in vivo* expression of effectors in connection with the development of INXN 3001/1001 and INXN 2001/1001 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. *See "License Agreements, Intellectual Property and Other Agreements — Exclusive Channel Partner Agreement with Intrexon Corporation "* below. INXN 3001/1001 (or DC-RTS-IL-12) and INXN 2001/1001 (or Ad-RTS-IL-12)

are the two existing clinical-stage products currently in development under this channel partnering arrangement. Under the arrangement, Intrexon assigned to us all regulatory filings and approvals relating to the two product candidates and we assumed sponsorship of the ongoing clinical trials of INXN 3001/1001.

Clinical Development Plan for INXN 3001/1001 and INXN 2001/1001 . INXN 3001/1001 is in a Phase Ib trial in the U.S. and employs intratumoral injection of modified dendritic cells from each patient (INXN-3001) and oral dosing of an activator ligand (INXN-1001) to turn on *in vivo* expression of interleukin-12 ("IL-12"). INXN-3001/1001 uses the RheoSwitch Therapeutic System (RTS ™) to control the timing and level of transgene expression for gene and cell therapy. RTS ™ functions as a "gene switch" for the regulated expression of human IL-12 in the patients' dendritic cells, which are transduced with a replication-deficient adenoviral vector carrying the IL-12 gene under the control of the RTS ™ and in this study injected intratumorally for the treatment of patients with stage III or IV melanoma. The binding of the small molecule activator to the fusion proteins of RTS ™ is intended to regulate the timing and level of IL-12 expression. In the absence of the activator ligand, the level of IL-12 is below detectable levels.

The activator ligand has been the subject of a number of preclinical, safety and pharmacology studies under FDA and ICH guidelines. Preclinical studies in the B16 mouse melanoma model consistently induced regression of established melanoma lesions, both in those directly injected and those elsewhere in the body. Preclinical studies have shown DC-RTS-IL-12, in combination with INXN-1001, to have strong activity against a broad array of cancers, including brain, colon, renal, and pancreatic cancers and melanoma.

A Phase Ia clinical study of the activator ligand was conducted in 65 healthy volunteers, with the two most common side effects being dysgeusia (impairment of taste) and throat irritation. In the subsequent Phase Ib trial, which is now ongoing in patients with advanced melanoma, one patient reported a severe adverse event that constitutes a dose limiting toxicity (DLT). According to the protocol, additional patients are being evaluated to determine if the dose escalation will continue or the maximum tolerated dose has been reached. Among the first four patients treated, one patient demonstrated an overall partial response and a second demonstrated a response in some lesions. The Phase Ib trial has been amended to study efficacy and immunological and biological effects in addition to safety with cohort-based dose escalation of the activator ligand during repeated treatment cycles.

INXN 2001/1001 is the basis of an IND application that we expect to submit during the first half of 2011 and we expect INXN 2001/1001 to enter the clinic along the same time frame, also targeting treatment of patients with late-stage malignant melanoma.

We intend to evaluate both INXN 3001/1001 and INXN 2001/1001 with the intent either to further develop both candidates or to select one of the two candidates for further study. INXN 2001/1001 is identical to INXN 3001/1001 except that the autologous dendritic cell component (INXN-3001) is omitted. Both product candidates are targeted for further development in different indications.

Competition

The development and commercialization for new products to treat cancer, including for both the targeted indications of STS for palifosfamide and PTCL for darinaparsin, is highly competitive, and considerable competition exists from major pharmaceutical, biotechnology, and specialty cancer companies. Several of our competitors have access to substantially greater financial and technical resources than we do and, even if we are successfully developing and commercializing palifosfamide and/or darinaparsin, these competitors have or can market products that could adversely impact the commercial success or potential of commercial success of these product candidates. 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 compete with our product candidates are summarized under the caption "Cancer Treatments."

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, both in the United States and in other countries. 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.

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 (collectively, 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 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 I 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 ("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 I clinical trial and $250 thousand that was paid in 2006 upon the dosing of the first patient in the Registrant-sponsored Phase II 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, 2008, 2009 or 2010.

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.

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 II 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 III milestones. 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.

License Agreement with Southern Research Institute ("SRI")

On December 22, 2004, the Company entered into an Option Agreement with SRI (the "Option Agreement"), 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, 2008, 2009 and 2010. 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 during the years ended December 31, 2008, 2009 or 2010.

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 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 manufacturer indibulin. No milestones under the license agreement were reached or expensed during the years ended December 31, 2008, 2009 or 2010.

Exclusive Channel Partner Agreement with Intrexon Corporation

On January 6, 2011, the Company entered into an Exclusive Channel Partner Agreement (the "Channel Agreement") with Intrexon Corporation ("Intrexon") that governs a "channel partnering" arrangement in which the Company will use Intrexon's technology directed towards in vivo expression of effectors in connection with the development of INXN 3001/1001 and INXN 2001/1001 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 (collectively, the "Cancer Program"). The Channel Agreement establishes committees comprised of Company and Intrexon representatives that will 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 the Company 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 ("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, the Company may not sublicense the rights described without Intrexon's written consent.

Under the Channel Agreement, and subject to certain exceptions, the Company is responsible for, among other things, the performance of the Cancer Program including development, commercialization and certain aspects of manufacturing of ZIOPHARM Products. Among other things, 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, 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, the Company 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. The Company has 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, the Company entered into a Stock Purchase Agreement with Intrexon, which is described under the caption " *Intrexon Corporation Private Placement and Equity Commitment* " below.

During the first 24 months of the agreement, either the Company or Intrexon may terminate the Channel Agreement in the event of a material breach by the other and Intrexon may terminate the Channel Agreement under certain circumstances if the Company assigns its rights under the Channel Agreement without Intrexon's consent. Following the first 24 months of the agreement, Intrexon may also terminate the Channel Agreement if the Company fails to use diligent efforts to develop and commercialize ZIOPHARM Products or if the Company elects 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, the Company may voluntarily terminate the Channel Agreement upon 90 days written notice to Intrexon.

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

- is being commercialized by the Company;
- 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 II clinical trial (in the case of a termination by Intrexon due to a ZIOPHARM uncured breach or a voluntary termination by the Company), or an ongoing Phase I clinical trial in the Field (in the case of a termination by the Company due to an Intrexon uncured breach or a termination by Intrexon following an unconsented assignment by the Company or the Company's election not to pursue development of a Superior Therapy).

The Company's 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 ("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 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 EMEA 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 7, 2009. During 2010, the agreement was extended through April 7, 2011. The Company expensed $240 thousand during the years ended December 31, 2009 and 2010 for consulting services per the aforementioned agreement. No milestones under the collaboration agreement were reached or expensed during the years ended December 31, 2008, 2009 or 2010.

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.

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 about material patents and other proprietary rights covering our product candidates is set forth below.

Darinaparsin

The patent estate covering darinaparsin compositions, methods of use and methods of manufacture includes three issued United States patents, as well as issued patents in certain foreign jurisdictions, all of which are scheduled to expire in 2023. We license these patents, as well as pending applications in various foreign jurisdictions, from The University of Texas M. D. Anderson Cancer Center and the Texas A&M University System pursuant to an agreement dated August 24, 2004. We have also filed pending applications in the United States and various foreign jurisdictions.

Palifosfamide

The patent estate covering palifosfamide compositions, methods of use and methods of manufacture includes one issued United States patent that is scheduled to expire in 2029, as well as pending applications in the United States and various foreign jurisdictions. We license the issued patent and the patent applications from DEKK-Tec, Inc. pursuant to an agreement dated October 15, 2004. We have also filed pending applications in the United States and various foreign jurisdictions.

Indibulin

The patent estate covering indibulin compositions, methods of use and methods of manufacture includes pending applications in the United States, and various foreign jurisdictions, all of which we license from affiliates of Baxter Healthcare Corporation pursuant to an agreement dated November 6, 2006. We also have five issued United States patents that are scheduled to expire at varying times between 2017 and 2019, as well as issued patents in various foreign jurisdictions, and have filed pending applications in the United States and various foreign jurisdictions.

INXN 3001/1001 and INXN 2001/1001

The patent estate licensed to us by Intrexon covering INXN 3001/1001 and INXN 2001/1001 compositions, methods of use and methods of manufacture includes U.S. and foreign issued patents and pending patent applications of Intrexon that are reasonably required or useful for us to conduct the Cancer Program set forth in the Channel Agreement, including but not limited to U.S. and foreign patents and patent applications directed towards in vivo expression of effectors. The earliest expiration dates of the licensed patents will be in 2019. Intrexon has the sole right to file, prosecute and maintain the licensed patents and patent applications.

Intrexon Corporation Private Placement and Equity Commitment

On January 6, 2011, and in conjunction with our execution and delivery of the Channel Agreement with Intrexon Corporation, we entered into a Stock Purchase Agreement with Intrexon pursuant to which Intrexon agreed to purchase 2,426,235 shares of our common stock at a purchase price equal to $4.80 per share. At the same time, we agreed to issue to Intrexon 3,636,926 additional shares of our common stock at a 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. Upon satisfaction of customary closing conditions, the closing of the purchase and sale of these shares occurred on January 12, 2011 and we received cash proceeds from the sale of approximately $11.6 million. We have also agreed to issue additional shares of our common stock to Intrexon upon dosing of the first patient in a ZIOPHARM-conducted Phase II clinical trial in the United States, or similar study as we and Intrexon may agree in a country other than the United States, of a product 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. Upon satisfaction of such contingency, we have agreed to issue to Intrexon 3,636,926 additional shares of our common stock for a purchase price equal to the $0.001 par value of such shares, which price will be deemed paid in partial consideration for the execution and delivery of the Channel Agreement. Pursuant to a Registration Rights Agreement, we have agreed to file 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.

Under the Stock Purchase Agreement, if requested by the Company and subject to certain restrictions and limitations, Intrexon has agreed to purchase securities in conjunction with future securities offerings conducted by us that constitute "Qualified Financings" and that are conducted while the Exclusive Channel Partner Agreement remains in effect. For this purpose, a "Qualified Financing" means a sale of common stock or equity securities convertible into common stock in a public or private offering, raising gross proceeds of at least $10,000,000, where the sale of shares is either registered under the Securities Act of 1933, as amended, at the time of issuance or we agree to register the resale of such shares. In conjunction with a Qualified Financing, Intrexon has committed to purchase up to 19.99% of the securities issued and sold by us therein (such amount to be calculated exclusive of Intrexon's purchase). Intrexon will not be obligated to purchase securities in a Qualified Financing unless we are then in substantial compliance with our obligations under the Channel Agreement and, with respect to a Qualified Financing that is completed following January 6, 2012,

we confirm our intent that 40% of the net offering proceeds (the "Use of Proceeds Commitment Amount") shall have been spent, or in the next year will be spent, by us under the Channel Agreement. In the case of a Qualified Financing that is completed after January 6, 2013, Intrexon's purchase commitment will be further limited to an amount equal to 50% of the Use of Proceeds Commitment Amount. Intrexon's aggregate purchase commitment for all future Qualified Financings is capped at $50,000,000. On February 1, 2011, we amended the Stock Purchase Agreement to clarify that if Intrexon voluntarily elects to purchase securities in a Qualified Financing in which we do not request that Intrexon participate, the aggregate purchase price paid by Intrexon for such securities will be applied against and reduce the then remaining maximum amount of Intrexon's $50,000,000 aggregate equity purchase commitment. As a result of Intrexon's purchase of securities in our February 2011 public offering, the remaining maximum amount of Intrexon's equity purchase commitment is approximately $39.0 million.

Also pursuant to the Stock Purchase Agreement, the Company elected Randal J. Kirk, Chairman and Chief Executive Officer of Intrexon, as a member of our Board of Directors. In addition, we have agreed that at each stockholders' meeting at which directors are to be elected, we have agreed nominate and recommend for election to the Board of Directors an individual designated by Intrexon, provided that the Board of Directors determines that he or she is a suitable candidate. If Intrexon's designee is not elected to the Board of Directors by our stockholders, then, at Intrexon's election, such designee will be entitled to attend all Board of Directors and committee meetings as an observer subject to certain conditions and limitations. At such time as Intrexon controls 20% or more of our stock, we have agreed to cause a second individual designated by Intrexon to be elected to the Board of Directors and, so long thereafter as Intrexon continues to control 20% or more of our stock, at each stockholders' meeting at which directors are to be elected, we have agreed to nominate and recommend for election to the Board of Directors a second individual designated by Intrexon, provided that such second designee is an "independent director" under Nasdaq's listing standards and that the Board of Directors determines that he or she is a suitable candidate. The rights of Intrexon to designate director nominees discussed above will terminate upon the termination of the Channel Agreement or upon an earlier sale of the Company.

The Stock Purchase Agreement contains a standstill provision pursuant to which, among other things, Intrexon has agreed that, for a period of three years, subject to certain exceptions and unless invited in writing by us to do so, neither Intrexon nor its affiliates will, directly or indirectly: (i) effect or seek, initiate, offer or propose to effect, or cause or participate in any acquisition of our securities or assets of the Company; any tender or exchange offer, merger, consolidation or other business combination involving the Company; any recapitalization, restructuring, liquidation, dissolution or other extraordinary transaction with respect to the Company; or any "solicitation" of "proxies" or consents to vote any voting securities of the Company, or in any way advise or, assist any other person in doing so; (ii) form, join or in any way participate in a "group" with respect to any securities of the Company; (iii) otherwise act to seek to control or influence the management, Board of Directors or policies of the Company; provided that the Intrexon director designees, in their capacity as directors, may fully exercise their rights and duties as directors of the Company including freely communicating with the Company's executive management and Board of Directors; (iv) take any action reasonably expected to force the Company to make a public announcement regarding any such matters; or (v) enter into any agreements, discussions or arrangements with any third party with respect to any of the foregoing. Among other things and subject to certain exceptions, the standstill restrictions do not apply to the future purchase by Intrexon and/or its affiliates of up to 10% of the number of shares of our common stock then issued and outstanding in addition to the shares issuable pursuant to the Stock Purchase Agreement.

CRO Services Agreement with PPD Development, L. P.

The Company and PPD Development, L. P. ("PPD") are parties to a master clinical research organization services agreement dated January 29, 2010 and a related work order dated June 25, 2010 under which PPD provides clinical research organization ("CRO") services in support of the Company's clinical trials. PPD is entitled to cumulative payments of up to $21.5 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.

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 ("FDCA") and it's 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, warning letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, and/or criminal prosecution.

Drug Approval Process . None of our drugs may be marketed in the U.S. until the drug has received FDA approval. The steps required before a drug may be marketed in the U.S. 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 drug 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 drug 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, toxicity, and formulation, as well as animal studies. The conduct of the preclinical tests and formulation of the compounds 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 days after receipt by the FDA, unless before that time the FDA 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. The Company cannot be certain that submission of an IND will result in the FDA allowing a clinical trial(s) to be initiated.

Clinical trials involve the administration of an investigational drug 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 drug 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 I usually involves the initial introduction of the investigational drug 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 II 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 III trials usually continue to evaluate clinical efficacy and further test for safety by using the drug in its final form in an expanded patient population. There can be no assurance that Phase I, Phase II, or Phase III 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 application. This process is

known as Special Protocol Assessment ("SPA") and can be a somewhat lengthy process. An agreement may not be changed by the sponsor or 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 drug, are submitted to the FDA in the form of an NDA 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 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 NDA or BLA application is the vehicle through which investigational drug sponsors formally propose that the FDA approve a new pharmaceutical agent to be marketed and sold in the U.S. The data gathered during the animal studies and human clinical trials of an IND become part of the NDA or BLA.

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

- Is the drug safe and effective in its proposed use(s), and do the benefits of the drug outweigh the risks?
- Is the drug's proposed labeling (package insert) is appropriate, and what it should contain?
- Are the methods used in manufacturing the drug and the controls used to maintain the drug's quality adequate to preserve the drug's identity, strength, quality, and purity?

The FDA has various programs, including Exploratory INDs (also referred to as "Phase 0"), 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.

Section 505(b)(2) of the FDCA allows the FDA to approve a follow-on drug on the basis of data in the scientific literature or a prior FDA approval of an NDA for a related drug. Specifically, a 505(b)(2) application is one for which one or more of the investigations relied upon by the applicant for approval were not conducted by or for the applicant, and for which the applicant has not obtained a right of reference or use from the person by or for whom the investigations were conducted. A 505(b)(2) application may be submitted for a new drug product when some part of the data necessary for approval are derived from studies not conducted by or for the applicant and to which the applicant has not obtained a right of reference. For a new drug, these data are likely to be derived from published studies rather than the FDA's previous finding of safety and effectiveness of a drug. For changes to a previously approved drug product, an application may rely on the FDA's finding of safety and effectiveness of the previously approved product, coupled with the information needed to support the change from the approved product. The additional information could be new studies conducted by the applicant or published data. This use of Section 505(b)(2), described in the regulations at 21 CFR 314.54, was intended to encourage innovation without creating duplicate work, and reflects the principle that it is wasteful and unnecessary to carry out studies to demonstrate what is already known about a drug. This procedure potentially makes it easier for generic drug manufacturers to obtain rapid approval of new forms of drugs based on proprietary data of the original drug manufacturer.

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 followed subsequently by an approval 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 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 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, including withdrawal of the product from the market.

Employees

As of February 16, 2011, we had 32 full time employees and one part time employee.

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 10-K 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 on-going 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 never generated revenue and have incurred significant net losses in each year since our inception. For the year ended December 31, 2010, we had a net loss of $32.7 million and we had incurred approximately $123.8 million of cumulative net losses since our inception in 2003. We expect to continue to incur significant operating expenditures. Further development of our product candidates, including product candidates that we may develop under our channel partnering arrangement with Intrexon Corporation, 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 palifosfamide, further progress with the development of our other candidates may be significantly delayed and may depend on the success of our ongoing clinical trial involving palifosfamide.

Other than the Intrexon Corporation equity purchase commitment (*See "Management Discussion and Analysis of Financial Condition and Results of Operations — Recent Financing Transactions — Intrexon Corporation Private Placement and Equity Commitment")* , 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 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.

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, 2010, we had incurred approximately $123.8 million of cumulative net losses and had approximately $60.4 million of cash and cash equivalents. Taking into account our receipt of approximately $11.6 million in net proceeds from our January 2011 sale of common stock to Intrexon Corporation pursuant to a private placement transaction and approximately $59.4 million in net proceeds from our February 2011 public offering of common stock, and given our current plans for development of our product candidates, we anticipate that our cash resources will be sufficient to fund our operations until late 2012. 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. Specifically, we commenced the PICASSO 3 pivotal trial for IV palifosfamide early in the third quarter of 2010. We have estimated the sufficiency of our cash resources based in part on this trial design and our timing expectations for enrollment in the study. In addition, our forecast anticipates the initiation of a two-stage potentially pivotal trial for the study of darinaparsin for the treatment of PTCL, likely in certain relapsed patients. We also recently assumed responsibility for two product candidates under our exclusive channel partnership with Intrexon Corporation and we expect that the costs associated with these additional product candidates will increase the level of our overall research and development expenses significantly 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 have only recently assumed development responsibility for these products and the actual costs associated therewith may be significantly in excess of forecast amounts. 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.

Recently, capital markets have experienced a period of unprecedented instability that 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.

In the current economic environment, our need for additional capital and limited capital resources may force us to accept financing terms that could be significantly more dilutive than if we were raising capital when the capital markets were more stable. 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. 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;
- 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.

We commenced the PICASSO 3 pivotal trial for IV palifosfamide early in the third quarter of 2010. The trial is in front-line metastatic soft tissue sarcoma, entitled PICASSO 3, and is an international, randomized, double-blinded, placebo-controlled trial with a targeted enrollment of 424 patients. To date, the Company has experienced slower than anticipated enrollment in the trial due in part to the timing of regulatory approvals for opening trials sites and unanticipated contractual delays attributable to international healthcare budgetary constraints. The Company has taken steps to accelerate patient enrollment in order to meet its previous forecasted timeline for full enrollment by the end of 2011, including utilizing significantly more trial sites in the United States and elsewhere. However, the Company cannot assure that it will be able to enroll sufficient numbers of patients in the PICASSO 3 trial to meet its previous forecast for full enrollment. As an orphan designated indication, the patient population available for participation in the PICASSO 3 trial is generally limited. Also affecting the enrollment and pace of the study is a recent limited supply of doxorubicin necessary for the trial. If the Company cannot accelerate enrollment in the PICASSO 3 study to meet its forecasted timeline, if limited supply of doxorubicin prevents treatment of patients in the trial, or the trial is delayed for other reasons, the delay will postpone our receipt of results from the trial and, consequently, our ability to submit a corresponding NDA with FDA for regulatory approval in accordance with our plans. *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 have received "Orphan Drug" status for palifosfamide in both the United States and Europe, for darinaparsin in the United States and pending final notification in Europe and we are hopeful that we may be able to obtain "Fast Track" and/or additional Orphan Drug status from the FDA, Europe and certain other countries for our product candidates. Fast Track allows the FDA to facilitate development and expedite review of drugs that treat serious and life-threatening conditions so that an approved product can reach the market expeditiously. Fast Track status does not apply to a product alone, but applies to a combination of a product and the specific indications for which it is being studied. Therefore, it is a drug's development program for a specific indication that receives Fast Track designation. Orphan Drug status promotes the development of products that demonstrate the promise for the diagnosis and treatment of one disease or condition affecting fewer than 200,000 patients in the U.S. and affords certain financial and market protection benefits to successful applicants. There is no guarantee that any of our other product candidates will be granted Orphan Drug status or will be granted Fast Track status by the FDA 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.

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 IND submission or in the conduct of these trials. For example, the Phase Ia study of INXN 3001/1001 was previously placed on clinical hold for safety concerns relating to intra-patient dose escalation. Therefore, we cannot predict with any certainty the schedule for future clinical trials.

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 products 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.

The technology on which our channel partnering arrangement with Intrexon Corporation is based is early stage technology in the field of human oncologic therapeutics.

Our exclusive channel partnership with Intrexon contemplates our using Intrexon's advanced transgene engineering platform for the controlled and precise cellular production of anti-cancer effectors. The in vivo effector platform in which we have acquired rights represents early-stage technology in the field of human oncologic biotherapeutics, with INXN 3001/1001 currently in a Phase Ib study and INXN 2001/1001 the basis of an IND application that we expect to submit during the first half of 2011. 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 in this report that apply to our small molecule drug candidates, which are various stages of development, also apply to product candidates that we seek to develop under our exclusive channel partnership with Intrexon.

We will incur additional expenses in connection with our exclusive channel partnering arrangement with Intrexon Corporation.

The *in vivo* effector platform in which we have acquired rights for cancer from Intrexon includes two existing product candidates, with INXN 3001/1001 currently in a Phase Ib study and INXN 2001/1001 the basis of an IND application that we expect to submit during the first half of 2011. Upon entry into the exclusive channel partnership 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 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, we have added headcount in part to support our exclusive channel partnership endeavors and are opening a small office in the greater Washington D.C. area, which will add to our general and administrative expenses going forward.

Although our forecasts for expenses and the sufficiency of our capital resources set forth elsewhere in this report takes into account our plans to develop the Intrexon products, we have only recently assumed development responsibility for these products and the actual costs associated therewith may be significantly in excess of forecast 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 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 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 processes;
- 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.

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 our Company.

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 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 and Chief Medical Officer, Richard Bagley, our President, Chief Operating Officer and Chief Financial Officer, and our principal scientific, regulatory, and medical advisors. Dr. Lewis' and Mr. Bagley's employment are governed by written employment agreements that provide for terms that expire in January 2013 and July 2011, respectively. Dr. Lewis and Mr. Bagley 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. Bagley, 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.

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 U.S. 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 Biologics License Application ("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 BLA's. We cannot be sure that we will ever obtain regulatory clearance for any of our product candidates. Although individuals within our company have experience working with biologic product candidates, to date we as a company have not had any interactions with FDA's Center for Biologics Evaluation and Research, and our submission of the IND for INXN 2001/1001 will be our first biologic IND. 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.

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 for regulatory approval of our product candidates or whether such an NDA will be accepted. Because we do not anticipate generating revenues unless and until we submit one or more NDAs and thereafter obtain requisite FDA approvals, the timing of our NDA 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. FDA normally expects two randomized, well controlled Phase III pivotal studies in support of approval of an NDA or BLA. Our PICASSO 3 trial, even if successful, may not be sufficient to support approval and we may be required to conduct additional pivotal trials of palifosfamide in soft tissue sarcoma in order to obtain NDA approval. 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. 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 BLA's 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.

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 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 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.

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.

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 products, 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 products, 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 products in the United States or overseas.

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.

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 health care 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 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.

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 sell for inadequate prices or patients are unable to obtain adequate levels of reimbursement.

Our ability to commercialize our drugs, alone or with collaborators, will depend in part on the extent to which reimbursement will be available from:

- Government and health administration authorities;
- Private health maintenance organizations and health insurers; and
- Other healthcare payers.

Government and other healthcare payers increasingly attempt to contain healthcare costs by limiting both coverage and the level of reimbursement for drugs. As a result, we cannot provide any assurances that third-party payors will provide adequate coverage of and reimbursement for any of our product candidates. If we are unable to obtain adequate coverage of and 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 and future success.

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 ability to sell our products profitably.

We cannot predict the impact on our business of any legislation or regulations that may be adopted in the future. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability, or commercialize our products.

In addition, in many foreign countries, particularly the countries of the European Union, the pricing of prescription drugs is subject to government control. 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.

RISKS RELATED TO OUR INTELLECTUAL PROPERTY

If we 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.

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 U.S. 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 the Channel Agreement, 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 U.S. 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 aspects similar to those covered by our patents and patent applications; or
- Whether we will need to initiate litigation or administrative proceedings that may be costly whether we win or lose.

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. The U.S. Congress is considering patent reform legislation. In addition, the U.S. 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. Depending on decisions by the U.S. Congress, the federal courts, and the PTO, the laws and regulations governing patents 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. 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.

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, 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. 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 U.S. Patent and Trademark Office, including interference proceedings to determine the priority of inventions, or reexamination proceedings. 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 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 novel DNA biotherapeutics, which we are pursuing under our exclusive channel partnership with Intrexon, is particularly complex. We are aware of numerous U.S. and foreign patents and pending patent applications of third parties that cover compositions, methods of use and methods of manufacture of novel DNA biotherapeutics, 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 novel DNA biotherapeutics 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.

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 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.

OTHER RISKS RELATED TO OUR COMPANY

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, 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 would 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 indentified 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 Securities and Exchange Commission. This would likely have an adverse affect 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. In general, this statute 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 12, 2011 issuance of shares of common stock to Intrexon Corporation in a private placement transaction (*see "Management Discussion and Analysis of Financial condition and Results of Operations — Intrexon Corporation Private Placement and Equity Commitment"*), our board of directors waived the Section 203 prohibition with respect to a future business combination with Intrexon Corporation. However, the Stock Purchase Agreement governing such issuance contains a standstill provision that generally prohibits Intrexon from seeking, initiating, offering or proposing to effect such a transaction with our inviting them to do so. 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.

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 our Company will be realized, if at all, only when you sell shares of our common stock.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Our corporate office is located at 1180 Avenue of the Americas, 19th Floor, New York, NY 10036. The New York office space is subject to a four-year lease agreement that expires in June 2014. Under the terms of the lease, we lease approximately 2,580 square feet and are required to make monthly rental payments of approximately $12 thousand through the remainder of the term of the lease. We also maintain business and development operations in Boston, Massachusetts in an office facility that occupies approximately 11,000 square feet. The Boston office space consists of two floors (floors two and three) which are leased pursuant to two separate lease agreements. The second floor, 4,425 square feet, is the subject of a two-year lease that expires August 2012 under which we are required to make monthly rental payments of approximately $8 thousand through the remainder of the lease term. The third floor, 6,959 square feet, is the subject of a five-year lease that expires August 2012 under which we are required to make monthly rental payments that range from approximately $15 thousand during the current year of the lease to approximately $16 thousand during the last year of the lease (see Note 7 to the financial statements, Commitments and Contingencies).

Item 3. Legal Proceedings

We are not currently involved in any material legal proceedings.

Item. 4. Removed and Reserved

PART II

Item 5. Market for Common Equity and related Stockholders Matters

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.

	2010		2009	
Quarter Ended	**High**	**Low**	**High**	**Low**
March 31	$ 5.09	$ 2.91	$ 0.95	$ 0.51
June 30	$ 6.09	$ 3.18	$ 2.14	$ 0.50
September 30	$ 4.02	$ 3.14	$ 2.74	$ 1.25
December 31	$ 5.05	$ 3.71	$ 4.10	$ 2.35

Record Holders

As of February 16, 2011, we had approximately 160 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 16, 2011, we had approximately 6,414 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

On January 6, 2011, and in conjunction with our execution and delivery of the Channel Agreement with Intrexon Corporation, we entered into a Stock Purchase Agreement with Intrexon pursuant to which Intrexon agreed to purchase 2,426,235 shares of our common stock (the "Purchase Shares") at a purchase price equal to $4.80 per share. At the same time, we agreed to issue to Intrexon 3,636,926 additional shares of our common stock (the "First Tranche Shares") at a 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. Upon satisfaction of customary closing conditions, the closing of the purchase and sale of the Purchase Shares and the First Tranche Shares occurred on January 12, 2011 and we received cash proceeds from the sale of approximately $11.6 million. We have also agreed to issue additional shares of our common stock to Intrexon upon dosing of the first patient in a ZIOPHARM-conducted Phase II clinical trial in the United States, or similar study as we and Intrexon may agree in a country other than the United States, of a product 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. Upon satisfaction of such contingency, we have agreed to issue to Intrexon 3,636,926 additional shares of our common stock (the "Second Tranche Shares") for a purchase price equal to the $0.001 par value of such shares, which price will be deemed paid in partial consideration for the execution and delivery of the Channel Agreement. S *ee "Management Discussion and Analysis of Financial condition and Results of Operations — Intrexon Corporation Private Placement and Equity Commitment. "*

The offer and sale of the Purchase Shares, the First Tranche Shares and the Second Tranche Shares were not registered under the Securities Act of 1933, as amended and, therefore, may not be offered or sold in the United States absent registration or an applicable exemption from registration requirements. For these issuances, we relied on the exemption from federal registration under Section 4(2) of the Securities Act and/or Rule 506 promulgated thereunder, based on our belief that the offer and sale of the shares did not involve a public offering as Intrexon is an "accredited investor" as defined under Section 501 promulgated under the Securities Act and no general solicitation was involved in the issuance and sale.

Issuer Purchases of Equity Securities

During 2010, we purchased 416,108 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 year ended December 31, 2010:

Period	Total Number of Shares Purchased	Average Price Paid Per Share ($)
January 1 to 31, 2010	15,283	$ 3.10
February 1 to 28, 2010	—	$ —
March 1 to 31, 2010	—	$ —
April 1 to 30, 2010	—	$ —
May 1 to 31, 2010	—	$ —
June 1 to 30, 2010	—	$ —
July 1 to 31, 2010	—	$ —
August 1 to 31, 2010	—	$ —
September 1 to 30, 2010	349,709	$ 3.95
October 1 to 31, 2010	—	$ —
November 1 to 30, 2010	—	$ —
December 1 to 31, 2010	51,116	$ 4.66
Total	416,108	

Item 6. Selected Financial Data

Smaller reporting companies are not required to provide disclosure pursuant to this Item.

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, the statements herein regarding future sales and operating results; our ability to raise capital or finance our operations; Company and industry growth and trends; growth of the markets in which the Company participates; international events; product performance; the generation, protection and acquisition of intellectual property, and litigation related to such intellectual property; new product introductions; development of new products, technologies and markets; the acquisition of or investment in other entities; the construction of new or refurbishment of existing facilities by the Company; and statements preceded by, followed by or that include the words “intends”, “estimates”, “plans”, “believes”, “expects”, “anticipates”, “should”, “could” or similar expressions, are forward-looking statements. 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 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 is seeking to develop and commercialize a diverse portfolio of in-licensed cancer drugs that can address unmet medical needs. Our principal focus has been on the licensing and development of proprietary small molecule drug candidates that are related to cancer therapeutics already on the market or in development and that can be administered by intravenous ("IV") and/or oral dosing. We are also pursuing the development of novel DNA-based biotherapeutics in the field of cancer pursuant to a partnering arrangement with Intrexon Corporation. Under the arrangement, we obtained rights to Intrexon's entire in effector platform for use in the field of oncology, which includes two existing clinical-stage product candidates. We plan to leverage Intrexon's synthetic biology platform for products to stimulate key pathways used by the body's immune system to inhibit the growth and metastasis of cancers, adding significantly to our small molecule drug development portfolio utilizing our global capabilities to translate science to the patient. More detailed descriptions of palifosfamide, darinaparsin and indibulin, INXN 3001/1001 and INXN 2001/1001, and our clinical development plans for each, are set forth in this report under the caption "Business — Product Candidates."

Development Plans

We are currently pursuing several clinical programs for our small molecule candidates, which include:

- palifosfamide (Zymafos ™ or ZIO-201) — completing our ongoing Phase II trial comparing doxorubicin plus palifosfamide to doxorubicin alone in patients with front- and second-line metastatic or unresectable soft tissue sarcoma, our recently initiated Phase III pivotal trial in front-line metastatic soft tissue sarcoma, entitled PICASSO 3, our recently initiated Phase I trial with palifosfamide in combination with etoposide and carboplatin to determine appropriate safety for initiating a subsequent randomized trial in front-line small-cell lung cancer, and pursuing a Phase I study for an oral form of palifosfamide that we expect to initiate subject to obtaining FDA approval to commence the trial.
- darinaparsin (Zinapar ™ or ZIO-101) — completing a Phase I study of darinaparsin with the combination treatment regimen called "CHOP" in front-line peripheral T-cell lymphoma ("PTCL"), initiating a two-stage potentially pivotal trial likely in certain relapsed patients later this year, and completing an ongoing Phase I study with an oral form of darinaparsin and, upon completion, conducting a Phase II study in solid tumors.
- indibulin (Zybulin ™ or ZIO-301) — completing a recently initiated Phase I safety trial of oral indibulin in combination with Xeloda ™ and pursuing the commencement of a Phase II breast cancer trial.

We are also pursuing the development of the existing product candidates under our channel partnering arrangement with Intrexon Corporation, including

- INXN 3001/1001 — completing a Phase Ib trial in patients with advanced melanoma in that is on-going in the U.S.
- INXN 2001/1001, submitting an IND application with the intention of entering the clinic in a Phase I trial targeting treatment of patients with late-stage malignant melanoma, each of which we expect to occur during the first half of 2011.

Although we are pursuing these clinical programs, our principal focus remains on the clinical development of IV palifosfamide for soft tissue sarcoma, completing the ongoing Phase II trial and the recently initiated Phase III pivotal trial while also initiating the SCLC Phase I trial and, subject to obtaining FDA approval, the Phase I study with the oral form.

Our current plans involve using internal financial resources to develop palifosfamide and pursue the clinical work discussed above, with the intention of ultimately partnering or otherwise raising additional resources to support further development activities for all of our product candidates,. Based on these plans, we expect to incur the following expenses during the next twelve months: approximately $57.5 million on research and development expenses and approximately $10.4 million on general corporate and administrative expenses. This forecast of expenses is forward-looking information that involves risks and uncertainties, and

the actual amount of our expenses over the next twelve months could vary materially and adversely as a result of a number of factors, including the factors discussed in the "Risk Factors" section of this report and the uncertainties applicable to our forecast for the overall sufficiency of our capital resources, which are discussed under *"Liquidity and Capital Resources"* below. 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 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 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 pre-clinical 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.

In 2010, our clinical projects consisted primarily of a Phase III project for our lead product candidate palifosfamide. This project was initiated during 2010. The expenses incurred by us to third parties were $4.9 million for the year ended December 30, 2010 and $4.9 million for project to date.

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 pre-clinical 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 pre-clinical and clinical development of each of these types of products to require the expenditure of substantial resources.

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

Clinical Phase	Estimated Completion Period
Phase I	1 – 2 years
Phase II	2 – 3 years
Phase III	2 – 4 years

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 inversely 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 ability 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, 2010 versus December 31, 2009

Revenues. We had no revenues for the years ended December 31, 2010 and 2009.

Research and development expenses. Research and development expenses during the years ended December 31, 2010 and 2009 were as follows:

	Year ended December 31,			
($ in thousands)	2010	2009	Change	
Research and development	$ 12,910	$ 4,556	$ 8,354	183%

Research and development expenses increased by $8.4 million from the year ended December 31, 2009 to the year ended December 31, 2010. The increase is primarily attributable to increased clinical trial costs of $5.9 million, with $4.9 million related to the pivotal Phase III palifosfamide trial and $1.0 million related to other trials, increased manufacturing costs of $1.8 million to produce drugs for the pivotal Phase III palifosfamide trial along with other trials, increased employee costs of $0.5 million from additional headcount and $0.2 million other.

We expect our research and development expenses to continue to increase as our pivotal Phase III palifosfamide trial and other studies for palifosfamide, darinaparsin and indibulin continue to enroll patients.

General and administrative expenses. General and administrative expenses during the years ended December 31, 2010 and 2009 were as follows:

	Year ended December 31,			
($ in thousands)	**2010**	**2009**	**Change**	
General and administrative	$ 11,636	$ 7,567	$ 4,069	54%

General and administrative expenses increase by $4.1 million from the year ended December 31, 2009 to the year ended December 31, 2010. The increase is primarily attributable to $0.8 million in employee costs, $1.3 million in stock based compensation, $0.6 million in consulting costs, $0.8 million in legal expense, $0.5 million in licenses and $0.1 million other.

We expect our general and administrative expenses to increase moderately due to increased activity to support the new clinical studies.

Other income (expense) . Other income (expense) during the years ended December 31, 2010 and 2009 were as follows:

	Year ended December 31,			
($ in thousands)	**2010**	**2009**	**Change**	
Other income, net	$ 765	$ 13	$ 752	5785%
Change in fair value of warrants	(8,889)	4,461	$ (13,350)	-299%
Total	$ (8,124)	$ 4,474	$ (12,598)	

The increase in other income from the year ended December 31, 2009 to the year ended December 31, 2010 was primarily due to an increase in liability-classified warrants, which change was primarily driven by an increase in the Company's stock price. (see Note 8 to the financial statements, Warrants, for a discussion on the reclassification of certain warrants from stockholders equity to liabilities on January 1, 2009). Additionally, the Company received approximately $733 thousand under the Qualifying Therapeutic Discovery Project grant.

Results of Operations for the fiscal year ended December 31, 2009 versus December 31, 2008

Revenues. We had no revenues for the years ended December 31, 2009 and 2008.

Research and development expenses. Research and development expenses during the years ended December 31, 2009 and 2008 were as follows:

	Year ended December 31,			
($ in thousands)	**2009**	**2008**	**Change**	
Research and development	$ 4,556	$ 17,245	$ (12,689)	-74%

Research and development expenses decreased by $12.7 million from the year ended December 31, 2008 to the year ended December 31, 2009. The decrease is primarily attributable to reduced activity related to clinical trials amounting to $10.5 million, decreased headcount amounting to $1.8 million and other reductions amounting to $413 thousand. These reductions and savings resulted from the cost cutting initiatives we implemented starting in 2008 leading into 2009.

General and administrative expenses. General and administrative expenses during the years ended December 31, 2009 and 2008 were as follows:

	Year ended 31, December			
($ in thousands)	**2009**	**2008**	**Change**	
General and administrative	$ 7,567	$ 8,374	$ (807)	-10%

General and administrative expenses decreased by $807 thousand from the year ended December 31, 2008 to the year ended December 31, 2009. The decrease is primarily attributable to cost cutting initiatives. These initiatives include reduced headcount amounting to a savings of $857 thousand, reduced legal, patent and license activities amounting to a savings of $336 thousand and other reductions amounting to a savings of $176 thousand. These savings were partially offset by an increase in stock compensation expense of $562 thousand attributable to increased stock option awards during 2009.

Other income . Other income during the years ended December 31, 2009 and 2008 were as follows:

	Year ended 31, December			
($ in thousands)	**2009**	**2008**	**Change**	
Other income, net	$ 13	$ 388	$ (375)	-97%
Change in fair value of warrants	4,461	—	$ 4,461	100%
Total	$ 4,474	$ 388	$ 4,086	

The increase in other income from the year ended December 31, 2008 to the year ended December 31, 2009 was due primarily to liability-classified warrants being marked to market in 2009. (see Note 8 to the financial statements, Warrants, for a discussion on the reclassification of certain warrants from stockholders equity to liabilities on January 1, 2009). Additionally, interest income decreased due to lower cash balances on hand during 2009.

Liquidity and Capital Resources

As of December 31, 2010, we had approximately $60.4 million in cash and cash equivalents, compared to $48.8 million in cash and cash equivalents as of December 31, 2009. Taking into account our receipt of approximately $11.6 million in net proceeds from our January 2011 sale of common stock to Intrexon Corporation pursuant to a private placement transaction and approximately $59.4 million in net proceeds from our February 2011 public offering of common stock, and given our current plans for development of our product candidates, we anticipate that our cash resources will be sufficient to fund our operations until late 2012. 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. Specifically, we commenced the PICASSO 3 pivotal trial for IV palifosfamide early in the third quarter of 2010. We have estimated the sufficiency of our cash resources based in part on this trial design and our timing expectations for enrollment in the study. In addition, our forecast anticipates the initiation of a two-stage potentially pivotal trial for the study of darinaparsin for the treatment of PTCL, likely in certain relapsed patients.

We also recently assumed responsibility for two product candidates under our exclusive channel partnership with Intrexon Corporation in early January 2011. We expect that the costs associated with these 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 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, we have added headcount in part to support our exclusive channel partnership endeavors and are opening a small office in the greater Washington D.C. area, which will 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 have only recently assumed development responsibility for these products and the actual costs associated therewith may be significantly in excess of forecast amounts.

Although our forecasts for expenses and the sufficiency of our capital resources takes into account our plans to develop the Intrexon products, we have only recently assumed development responsibility for these products and the actual costs associated therewith may be significantly in excess of forecast amounts. 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 the Company is able to obtain will be adequate to support the Company's working capital requirements until it achieves profitable operations. Other than the Intrexon Corporation equity purchase commitment (*See "Recent Financing Transactions — Intrexon Corporation Private Placement and Equity Commitment"* below), 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

Intrexon Corporation Private Placement and Equity Commitment

On January 12, 2011, we completed a sale of common stock to Intrexon Corporation pursuant to a Stock Purchase Agreement dated January 6, 2011. Pursuant to the Stock Purchase Agreement, Intrexon purchased 2,426,235 shares of our common stock at a purchase price equal to $4.80 per share. At the same time, we issued to Intrexon 3,636,926 additional shares of our common stock at a 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 our Exclusive Channel Partner Agreement with Intrexon. The issuance and sale, which was conducted as a private placement transaction, resulted in cash proceeds to us of approximately $11.6 million. We have also agreed to issue additional shares of our common stock to Intrexon upon dosing of the first patient in a ZIOPHARM-conducted Phase II clinical trial in the United States, or similar study as we and Intrexon may agree in a country other than the United States, of a product that is created, produced, developed or identified directly or indirectly by us during the term of the Exclusive Channel Partner 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. Upon satisfaction of such contingency, we have agreed to issue to Intrexon 3,636,926 additional shares of our common stock for a purchase price equal to the $0.001 par value of such shares, which price will be deemed paid in partial consideration for the execution and delivery of the Exclusive Channel Partner Agreement. Pursuant to a Registration Rights Agreement, we have agreed to file 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.

Under the Stock Purchase Agreement, if requested by the Company and subject to certain restrictions and limitations, Intrexon has agreed to purchase securities in conjunction with future securities offerings conducted by us that constitute "Qualified Financings" and that are conducted while the Exclusive Channel Partner Agreement remains in effect. For this purpose, a "Qualified Financing" means a sale of common stock or equity securities convertible into common stock in a public or private offering, raising gross proceeds of at least $10,000,000, where the sale of shares is either registered under the Securities Act of 1933, as amended, at the time of issuance or we agree to register the resale of such shares. In conjunction with a Qualified Financing, Intrexon has committed to purchase up to 19.99% of the securities issued and sold by us therein (such amount to be calculated exclusive of Intrexon's purchase). Intrexon will not be obligated to purchase securities in a Qualified Financing unless we are then in substantial compliance with our obligations under the Exclusive Channel Partner Agreement and, with respect to a Qualified Financing that is completed following January 6, 2012, we confirm our intent that 40% of the net offering proceeds (the "Use of Proceeds Commitment Amount") shall have been spent, or in the next year will be spent, by us under the Exclusive

Channel Partner Agreement. In the case of a Qualified Financing that is completed after January 6, 2013, Intrexon's purchase commitment will be further limited to an amount equal to 50% of the Use of Proceeds Commitment Amount. Intrexon's aggregate purchase commitment for all future Qualified Financings is capped at $50,000,000. On February 1, 2011, we amended the Stock Purchase Agreement to clarify that if Intrexon voluntarily elects to purchase securities in a Qualified Financing in which we do not request that Intrexon participate, the aggregate purchase price paid by Intrexon for such securities will be applied against and reduce the then remaining maximum amount of Intrexon's $50,000,000 aggregate equity purchase commitment. As a result of Intrexon's purchase of securities in the February 2011 public offering described below, the remaining maximum amount of Intrexon's equity purchase commitment is $39.0 million.

February 2011 Public Offering

On February 3, 2011, we entered into an underwriting agreement with Barclays Capital Inc. relating to the issuance and sale of 9,600,000 shares of our common stock. The price to the public in the offering was $5.75 per share, and Barclays Capital, the sole book-running manager for the offering, agreed to purchase the shares from us pursuant to the underwriting agreement at a purchase price of $5.425 per share. Under the terms of the underwriting agreement, we also granted Barclays Capital an option, exercisable for 30 days, to purchase up to an additional 1,440,000 shares of common stock at a purchase price of $5.425 per share. The offering was made pursuant to our effective registration statement on Form S-3 (Registration Statement No. 333-166444) previously filed with the Securities and Exchange Commission, and a prospectus supplement thereunder. The transactions contemplated by the underwriting agreement were completed on February 8, 2011. In connection with the closing, Barclays Capital purchased the 9,600,000 firm shares contemplated by the underwriting agreement and exercised in full its option to purchase an additional 1,440,000 shares, resulting in our issuing a total of 11,040,000 shares at the closing. The net proceeds from the offering were approximately $59.4 million after deducting underwriting discounts and estimated offering expenses.

Cash Increases and (Decreases)

The following table summarizes our net increase (decrease) in cash and cash equivalents for the years ended December 31, 2010, 2009 and 2008 and the period from September 9, 2003 (date of inception) through December 31, 2010:

($ in thousands)	Year ended December 31, 2010	2009	2008	Period from September 9, 2003 (date of inception) through December 31, 2010
Net cash provided by (used in):				
Operating activities	$(19,694)	$(12,294)	$(23,519)	$ (103,973)
Investing activities	(186)	(11)	(131)	(1,910)
Financing activities	31,433	49,765	—	166,275
Net increase (decrease) in cash and cash equivalents	$ 11,553	$ 37,460	$(23,650)	$ 60,392

Cash flow from operating activities. Our uses of cash for operating activities have primarily consisted of salaries and wages for our employees, facility and facility-related costs for our offices, fees paid in connection with preclinical and clinical studies and professional fees. Net cash used in operating activities was $19.7 million for the year ended December 31, 2010 compared to $12.3 million for the year ended December 31, 2009. The $7.4 million increase was primarily due to an increase in research and development activities from our Phase III palifosfamide trial, partially offset by increases in accrued liabilities.

Cash flow from investing activities. Net cash used in investing activities was $186 thousand for the year ended December 31, 2010 compared to $11 thousand for the year ended December 31, 2009. The increase was due to increased purchases of property plant and equipment.

Cash flow from financing activities. Net cash provided by financing activities was $31.4 million for the year ended December 31, 2010 compared to $49.8 million for the year ended December 31, 2009. The decrease of $18.4 million is primarily attributable differences in the levels of financing proceeds from year to year partially offset by the re-purchase of common stock by the Company to cover taxes upon vesting of previously granted restricted stock awards.

Operating capital and capital expenditure requirements

The Company anticipates that losses will continue for the foreseeable future. At December 31, 2010, the Company's accumulated deficit was approximately $123.8 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;
- Internal costs associated with the development of palifosfamide and indibulin and our ability to secure further financing for darinaparsin development from a partner;
- 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" below.

Working capital as of December 31, 2010 was $57.2 million, consisting of $60.8 million in current assets and $3.6 million in current liabilities. Working capital as of December 31, 2009 was $46.1 million, consisting of $49.2 million in current assets and $3.1 million in current liabilities.

Contractual obligations

The following table summarizes our outstanding obligations as of December 31, 2010 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	$ 984	$ 434	$ 480	$ 70	$ —
Royalty and license fees	1,600	25	550	525	500
Contract milestone payments	15,806	6,856	8,474	476	—
Total	$ 18,390	$ 7,315	$ 9,504	$ 1,071	$ 500

Our commitments for operating leases relate to the lease for our corporate headquarters in New York, New York and our operations center in Boston, Massachusetts. Our commitments for royalty and license fees relate to our patent agreement with Baxter Healthcare Corporation and our royalty agreements with Southern Research Institute and Baxter Healthcare Corporation requiring minimum royalty payments. The contract milestone payments relate to our CRO agreement with PPD Development, L. P. 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, 2010 (see Note 7 to the financial statements, Commitments and Contingencies).

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;
- Stock-based compensation; and
- Income taxes.

Clinical Trial Expenses

Clinical trial expenses include expenses associated with Clinical Research Organizations ("CRO"). 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

We have warrant liabilities that are measured using fair value. 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.

Stock-Based Compensation and Warrants

We make certain assumptions in order to value and expense our share-based compensation awards. In connection with valuing stock options and warrants we use the Black-Scholes model, which requires 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. In connection with our restricted stock programs, we make assumptions principally related to the forfeiture rate.

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. Such changes may lead to a significant change in the expense we recognize in connection with share-based payments.

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 are included in our balance sheets. 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

In January 2010, the FASB issued Accounting Standards Update ("ASU") No. 2010-06 *Fair Value Measurements and Disclosures* (Topic 820) which improves disclosures about fair value measurements. More specifically, ASU 2010-06 updates Topic 820-10 to require disclosure of transfers in and out of levels 1 and 2 and the reason for the transfers. Additionally, it requires separate reporting of purchases, sales, issuances and settlements for level 3. This update is effective for periods beginning after December 15, 2009. The adoption of this standard did not have an impact on our financial position or results of operations.

In April 2009, the United States Securities and Exchange Commission ("SEC") issued Final Rule No. 33-9002, *Interactive Data to Improve Financial Reporting* , which requires companies to submit financial statements in XBRL (extensible business reporting language) format with their SEC filings. The Company will be required to provide interactive data reports starting with their first quarterly report for fiscal periods ending on or after June 15, 2011. The adoption of this standard will not have an impact on our financial position or results of operations.

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.

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 and 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-36 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 Financial 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 Securities Exchange Act of 1934, as amended (the "Exchange Act"), as of December 31, 2010. Based on that evaluation, our Chief Executive Officer and Chief Financial 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 the Company. 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, 2010, of our internal control over financial reporting based on the framework in *Internal Control — Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this evaluation, management concluded that the Company's internal control over financial reporting was effective as of December 31, 2010.

McGladrey & Pullen, LLP, an independent registered public accounting firm, has issued an attestation report on the Company's internal control over financial reporting as of December 31, 2010. That report is included in this annual report on Form 10-K.

Changes in Internal Controls over Financial Reporting

There were no changes in our internal control over financial reporting during the quarter ended December 31, 2010 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

Information in response to this Item is incorporated herein by reference to 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.

Our Board of Directors adopted a Code of Business Conduct and Ethics to be applicable to all officers, directors and employees. The Code of Business Conduct and Ethics is intended to be designed to deter wrong-doing and promote honest and ethical behavior, full, fair, timely, accurate and understandable disclosure, and compliance with applicable laws. The Code of Ethics is available on our website at *www.ziopharm.com* and a copy may be obtained without charge upon written request to the Company's President at the Company's headquarters address.

Item 11. Executive Compensation

Information in response to this Item is incorporated herein by reference to 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.

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

Securities Authorized for Issuance under Equity Compensation Plans

The Company's Amended and Restated 2003 Stock Option Plan (the "2003 Plan"), which is currently the Company's only equity compensation plan, has been approved by the Company's stockholders. The following table sets forth certain information as of December 31, 2010 with respect to the 2003 Plan:

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	4,566,935	$ 3.39	2,076,651
Total:	4,566,935	$ 3.39	2,076,651
Equity compensation plans not approved by stockholders:			
	—	$ —	—
Total:	—	$ —	—

Additional information in response to this Item is incorporated herein by reference to 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.

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

Information in response to this Item is incorporated herein by reference to 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.

Item 14. Principal Accountant Fees and Services

Information in response to this Item is incorporated herein by reference to 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.

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.

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 1, 2011

By: /s/ Jonathan Lewis

Jonathan Lewis
Chief Executive Officer
(Principal Executive Officer)

Date: March 1, 2011

By: /s/ Richard Bagley

Richard Bagley
President, Chief Financial Officer, Treasurer and Chief Operating Officer
(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 1, 2011
/s/ Richard Bagley Richard Bagley	Director, President, Chief Financial Officer, Treasurer and Chief Operating Officer (Principal Accounting and Financial Officer)	March 1, 2011
/s/ Murray Brennan Murray Brennan	Director	March 1, 2011
/s/ James Cannon James Cannon	Director	March 1, 2011
/s/ Wyche Fowler, Jr. Wyche Fowler, Jr.	Director	March 1, 2011
Randal J. Kirk	Director	March 1, 2011
/s/ Timothy McInerney Timothy McInerney	Director	March 1, 2011
/s/ Michael Weiser Michael Weiser	Director	March 1, 2011

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 balance sheet of ZIOPHARM Oncology, Inc. (a development stage company) as of December 31, 2010 and the related statements of operations, changes in preferred stock and stockholders' equity (deficit) and cash flows for the year then and for the period from September 9, 2003 (date of inception) through December 31, 2010. We also have audited ZIOPHARM Oncology, Inc.'s internal control over financial reporting as of December 31, 2010, based on criteria established in *Internal Control — Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission. 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 based on our audit. The financial statements for the period from September 9, 2003 (date of inception) to December 31, 2009 were audited by other auditors and our opinion, insofar as it relates to cumulative amounts included for such periods, is based solely on the reports of such other auditors.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audit 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 audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (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, based on our audit and the reports of other auditors, the financial statements referred to above present fairly, in all material respects, the financial position of ZIOPHARM Oncology, Inc. as of December 31, 2010 and the results of its operations and its cash flows for the year then ended and from September 9, 2003 (date of inception) through December 31, 2010 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, 2010, based on criteria established in *Internal Control — Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

/s/ McGladrey & Pullen, LLP

Boston, Massachusetts
February 28, 2011

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of
ZIOPHARM Oncology, Inc.
Boston, Massachusetts

We have audited the balance sheet of ZIOPHARM Oncology, Inc. (a development stage company) as of December 31, 2009 and the related statements of operations, changes in preferred stock and stockholders' equity (deficit) and cash flows for each of the years in the two-year period ended December 31, 2009 and for the period from September 9, 2003 (date of inception) through December 31, 2009. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement. The Company is not required to have, nor were we engaged to perform, audits of its internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the company's internal control over financial reporting. Accordingly, we express no such opinion. An audit includes 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, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of ZIOPHARM Oncology, Inc. as of December 31, 2009 and the results of its operations and its cash flows for each of the years in the two-year period ended December 31, 2009 and from September 9, 2003 (date of inception) through December 31, 2009 in conformity with accounting principles generally accepted in the United States of America.

/s/ Caturano and Company, P.C.

Boston, Massachusetts
March 17, 2010

ZIOPHARM Oncology, Inc.
(a development stage enterprise)

BALANCE SHEETS
(in thousands, except share and per share data)

	December 31, 2010	December 31, 2009
ASSETS		
Current assets:		
Cash and cash equivalents	$ 60,392	$ 48,839
Prepaid expenses and other current assets	424	354
Total current assets	60,816	49,193
Property and equipment, net	253	255
Deposits	87	46
Other non current assets	364	242
Total assets	$ 61,520	$ 49,736
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 1,031	$ 1,789
Accrued expenses	2,538	1,261
Deferred rent – current portion	43	45
Total current liabilities	3,612	3,095
Deferred rent	44	66
Warrant liabilities	27,311	18,471
Total liabilities	30,967	21,632
Commitments and contingencies (note 7)		
Stockholders' equity:		
Common stock, $0.001 par value; 250,000,000 shares authorized; 48,466,562 and 41,583,528 shares issued and outstanding at December 31, 2010 and 2009, respectively	48	42
Preferred stock, $0.001 par value; 30,000,000 shares authorized and no shares issued and outstanding	—	—
Additional paid-in capital – common stock	131,530	96,133
Additional paid-in capital – warrants issued	22,789	23,073
Deficit accumulated during the development stage	(123,814)	(91,144)
Total stockholders' equity	30,553	28,104
Total liabilities and stockholders' equity	$ 61,520	$ 49,736

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

ZIOPHARM Oncology, Inc.
(a development stage enterprise)

STATEMENTS OF OPERATIONS
(in thousands, except share and per share data)

	For the Year Ended December 31,			September 9, 2003 (date of inception) through December 31, 2010
	2010	2009	2008	
Revenue	$ —	$ —	$ —	$ —
Operating expenses:				
Research and development	12,910	4,556	17,245	71,816
General and administrative	11,636	7,567	8,374	53,811
Total operating expenses	24,546	12,123	25,619	125,627
Loss from operations	(24,546)	(12,123)	(25,619)	(125,627)
Other income, net	765	13	388	4,675
Change in fair value of warrants	(8,889)	4,461	—	(2,862)
Net loss	$ (32,670)	$ (7,649)	$ (25,231)	$ (123,814)
Basic and diluted net loss per share	$ (0.71)	$ (0.33)	$ (1.19)	
Weighted average common shares outstanding used to compute basic and diluted net loss per share	46,003,996	23,108,039	21,232,663	

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

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, 2010
(in thousands, except share and per share data)

	Preferred Stock and Warrants			Stockholder's 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				
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.

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, 2010
(in thousands, except share and per share data)

	Convertible Preferred Stock and Warrants			Stockholder's Equity (Deficit)					
	Series A Convertible Preferred Stock		Warrants to Purchase Series A Convertible 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 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 .500974	(4,197,946)	(15,077)	(1,683)	4,197,823	4	15,073	1,683	—	—
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.

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, 2010
(in thousands, except share and per share data)

	Preferred Stock and Warrants			Stockholder's 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.

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, 2010
(in thousands, except share and per share data)

	Preferred Stock and Warrants			Stockholder's 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				
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
Issuance of common stock and warrants in a registered direct offering, net of commission and expenses of $2,802 and warrants of $22,860	—	—	—	15,484,000	15	22,323	—	—	22,338
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.

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, 2010
(in thousands, except share and per share data)

	Preferred Stock and Warrants			Stockholder's 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				
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)	—	—	—	—	—
Cancelled 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

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

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, 2010
	2010	2009	2008	
Cash flows from operating activities:				
Net loss	$(32,670)	$ (7,649)	$(25,231)	$ (123,814)
Adjustments to reconcile net loss to net cash used in operating activities:				
Depreciation and amortization	188	330	388	1,649
Stock-based compensation	3,637	2,181	1,600	12,542
Change in fair value of warrants	8,889	(4,461)	—	2,861
Loss on disposal of fixed assets	—	—	—	9
Change in operating assets and liabilities:				
(Increase) decrease in:				
Prepaid expenses and other current assets	(70)	(27)	172	(424)
Other noncurrent assets	(122)	49	66	(364)
Deposits	(41)	41	8	(87)
Increase (decrease) in:				
Accounts payable	(758)	(850)	(270)	1,031
Accrued expenses	1,277	(1,876)	(259)	2,538
Deferred rent	(24)	(32)	7	86
Net cash used in operating activities	(19,694)	(12,294)	(23,519)	(103,973)
Cash flows from investing activities:				
Purchases of property and equipment	(186)	(11)	(132)	(1,911)
Proceeds from sale of property and equipment	—	—	1	1
Net cash used in investing activities	(186)	(11)	(131)	(1,910)
Cash flows from financing activities:				
Stockholders' capital contribution		—	—	500
Proceeds from exercise of stock options	225	73	—	363
Payments to employees for repurchase of restricted common stock	(1,668)	(380)	—	(2,048)
Proceeds from exercise of warrants	72	279	—	351
Proceeds from issuance of common stock and warrants, net	32,804	49,793	—	150,349
Proceeds from issuance of preferred stock, net	—	—	—	16,760
Net cash provided by financing activities	31,433	49,765	—	166,275
Net increase (decrease) in cash and cash equivalents	11,553	37,460	(23,650)	60,392
Cash and cash equivalents, beginning of period	48,839	11,379	35,029	—

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	$ —	$ 27,068	$ —	$ 47,276
Preferred stock conversion to common stock	$ —	$ —	$ —	$ 16,760
Exercise of equity-classified warrants to common shares	$ 239	$ —	$ —	$ 257
Exercise of liability-classified warrants to common shares	$ 49	$ —	$ —	$ 49

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

ZIOPHARM Oncology, Inc.
(a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

1. Organization

ZIOPHARM Oncology, Inc. ("ZIOPHARM" or the "Company") is a biopharmaceutical company that seeks to acquire, develop and commercialize, on its own or with other commercial partners, products for the treatment of important unmet medical needs in cancer.

The Company has had limited operations to date and its activities 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, 2010. The Company's fiscal year ends on December 31.

The Company has operated at a loss since its inception in 2003 and had no revenues. The Company anticipates that losses will continue for the foreseeable future. At December 31, 2010, the Company's accumulated deficit was approximately $123.8 million. The Company currently believes that its existing resources at December 31, 2010, along with the proceeds from the transactions described under "Subsequent Events" in Note 3, are sufficient to fund development and commercialization activities into late 2012. The Company's ability to continue operations after its current cash resources are exhausted depends on its ability to obtain additional financing or 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 realized by the Company, or if realized, 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 May 27, 2010, the Company entered into an underwriting agreement (the "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 (the "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 this 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

ZIOPHARM Oncology, Inc.
(a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

2. Financings – (continued)

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 ("FASB") Accounting Standards Codification ("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 8 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.

In connection with the 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 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

ZIOPHARM Oncology, Inc.
(a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

2. Financings – (continued)

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.

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 6 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 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 met 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 Rule 144(k) 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

ZIOPHARM Oncology, Inc.
(a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

2. Financings – (continued)

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.

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 6 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.

ZIOPHARM Oncology, Inc.
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NOTES TO FINANCIAL STATEMENTS

2. Financings – (continued)

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 Rule 144(k) 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, 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

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NOTES TO FINANCIAL STATEMENTS

2. Financings – (continued)

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 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 6 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.

The Company also entered into two financing transactions subsequent to year end. Such transactions are described in the "Subsequent Events" section of Note 3.

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;
- Stock-based compensation; and
- Income taxes.

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NOTES TO FINANCIAL STATEMENTS

3. Summary of Significant Accounting Policies – (continued)

Subsequent Events

On January 6, 2011, we entered into an Exclusive Channel Partner Agreement (the "Channel Agreement") with Intrexon Corporation ("Intrexon") that governs a "channel partnering" arrangement in which we will use Intrexon's technology directed towards in vivo expression of effectors in connection with the development of clinical-stage product candidates 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.

In connection with the Channel Agreement, we 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 our common stock in a private placement for a total purchase price of $11,645,928, or $4.80 per share. We simultaneously issued to Intrexon an additional 3,636,926 shares of our common stock at a 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. Under the terms of the Stock Purchase Agreement, we have agreed to issue to Intrexon an additional 3,636,926 shares of our common stock under certain conditions upon dosing of the first patient in a ZIOPHARM-conducted U.S. Phase II clinical trial of a product candidate created, produced or developed by us using Intrexon technology. If issued, the purchase price for such shares will be equal to the $0.001 par value of such shares, which price will be deemed paid in partial consideration for the execution and delivery of the Channel Agreement. Pursuant to the Registration Rights Agreement, we have agreed to file 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, Intrexon has agreed that, subject to certain conditions and restrictions and limitations, it will purchase our securities in conjunction with "qualified" securities offerings that we conduct while the Channel Agreement remains in effect. In conjunction with a particular qualified offering, Intrexon has committed to purchase up to 19.99% of the securities offering and sold therein (exclusive of Intrexon's purchase) if requested to do so by us. However, Intrexon will not be obligated to purchase securities in a "qualified" securities offering unless we are then in substantial compliance with our obligations under the Channel Agreement and, with respect to a "qualified" securities offering that is completed following January 6, 2012, we confirm our intent that 40% of the offering's net proceeds shall have been spent, or in the next year will be spent, by us under the Channel Agreement. In the case of a "qualified" securities offering that is completed after January 6, 2012, Intrexon's purchase commitment will be further limited to an amount equal to one-half of the proceeds spent or to be spent by us 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 will apply against Intrexon's $50.0 million purchase commitment regardless of whether Intrexon participates voluntarily or at the request of the Company.

On February 3, 2011, the Company entered into an underwriting agreement with Barclays Capital Inc. ("Barclays") relating to the issuance and sale of 9,600,000 shares of the Company's common stock, par value $0.001 per share 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 $59.4 million after deducting underwriting discounts and estimated offering expenses.

ZIOPHARM Oncology, Inc.
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NOTES TO FINANCIAL STATEMENTS

3. Summary of Significant Accounting Policies – (continued)

Cash and Cash Equivalents

Cash equivalents consist primarily of demand deposit money market accounts. Cash equivalents are stated at cost, which approximates fair market value.

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 consolidated balance sheets and related gains or losses are reflected in the consolidated statements of operations.

Long-Lived Assets

In accordance with FASB accounting standards, 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

On January 1, 2009, the Company adopted a newly issued 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 in May 2005 have terms that do not meet the criteria to be considered indexed to the Company's own stock and therefore were re-classified from the equity section to the liability section of the Company's balance sheet as of January 1, 2009. The 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 (expense). Fair value is measured using the Black-Scholes valuation model. Adoption of this new standard decreased equity warrants classified in stockholders' equity by $1,638 thousand, decreased deficit accumulated during the development stage by $1,566 thousand and increased warrant liabilities by $72 thousand (see Note 8 to the financial statements, Warrants, for additional disclosure).

Fair Value Measurements

The Company adopted a newly issued accounting standard for fair value measurements for financial assets and liabilities and for non-financial assets and non-financial liabilities, except those that are recognized or disclosed in the financial statements at fair value on a recurring basis, and adopted in this standard for the previously exempt assets and liabilities effective January 1, 2009. The accounting standard defines fair value, establishes a framework for measuring fair value under generally accepted accounting principles and enhances 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

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NOTES TO FINANCIAL STATEMENTS

3. Summary of Significant Accounting Policies – (continued)

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.

In April 2009, the Company adopted a newly issued accounting standard which provides guidelines for making fair value measurements more consistent including additional authoritative guidance in determining whether a market is active or inactive and whether a transaction is distressed. The adoption of these accounting standards did not have a material impact on the Company's results of operations, financial condition or cash flow.

Assets and liabilities measured at fair value on a recurring basis as of December 31, 2010 and 2009 are as follows:

($ in thousands)	Fair Value Measurements at Reporting Date Using			
Description	**Balance as of December 31, 2010**	**Quoted Prices in Active Markets for Identical Assets/Liabilities (Level 1)**	**Significant Other Observable Inputs (Level 2)**	**Significant Unobservable Inputs (Level 3)**
Cash equivalents	$ 59,219	$ 59,219	$ —	$ —
Warrant liability	$ 27,311	$ —	$ 27,311	$ —

($ in thousands)	Fair Value Measurements at Reporting Date Using			
Description	**Balance as of December 31, 2009**	**Quoted Prices in Active Markets for Identical Assets/Liabilities (Level 1)**	**Significant Other Observable Inputs (Level 2)**	**Significant Unobservable Inputs (Level 3)**
Cash equivalents	$ 48,585	$ 48,585	$ —	$ —
Warrant liability	$ 18,471	$ —	$ 18,471	$ —

No such assets or liabilities required disclosure as of or for the year ended December 31, 2008. The cash equivalents represent deposits in a short term U.S. treasury money market mutual fund. The warrants were valued using a Black-Scholes valuation model. See Note 8 to the financial statements, Warrants, for additional disclosure on the valuation methodology and significant assumptions.

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.

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NOTES TO FINANCIAL STATEMENTS

3. Summary of Significant Accounting Policies – (continued)

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 9 to the financial statements, Income Taxes).

Accounting for Stock-Based Compensation

On January 1, 2006, the Company adopted the accounting standard which provides guidelines for recording stock-based compensation. The Company used the modified prospective method, which resulted in the accounting standard only being applied to the financial statements on a go-forward basis (that is, the prior period results have not been restated). Under the fair value recognition provisions of the accounting standard, stock-based compensation cost is measured at the grant date based on the value of the award using the Black-Scholes Model and is recognized as expense over the service period. Previously, the Company had followed accounting standards which resulted in accounting for employee share options at their intrinsic value in the financial statements.

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, 2010, 2009, and 2008 and did not capitalize any such costs on the balance sheets. The Company recognized $1.3 million, $1.2 million, and $1.3 million of compensation expense related to vesting of employee stock options during the year ended December 31, 2010, 2009, and 2008, respectively. In the years ended December 31 2010, 2009, and 2008, the Company recognized $2.3 million, $990 thousand, and $289 thousand of compensation expense, respectively, related to vesting of restricted stock (see Note 11 to the financial statements, Stock Option Plan). In the years ended December 31, 2010, 2009, and 2008, the Company recognized $3.6 million, $2.2 million, and $1.6 million of compensation expense, respectively, related to vesting of employee and director awards. In the year ended December 31, 2010, the Company recognized $27 thousand of compensation expense, related to non-employee milestone awards. The following table presents share-based compensation expense included in the Company's Statements of Operations:

	For the year ended December 31,		
(in thousands)	**2010**	**2009**	**2008**
Research and development	$ 690	$ 512	$ 493
General and administrative	2,947	1,669	1,107
Share based employee compensation expense before tax	3,637	2,181	1,600
Income tax benefit	—	—	—
Net share based employee compensation expense	$ 3,637	$ 2,181	$ 1,600

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NOTES TO FINANCIAL STATEMENTS

3. Summary of Significant Accounting Policies – (continued)

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 2010, 2009, and 2008 was approximately $3.26, $1.18, and $1.20 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 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. Because the Company does not have sufficient historical exercise data, the Company calculated using the simplified method described in SEC Staff Accounting Bulletin (“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:

	2010	2009	2008
Weighted average risk-free interest rate	1.13 – 2.75%	1.31 – 2.61%	1.52 – 3.49%
Expected life in years	5	5	5
Expected volatility	89.2 – 90.6%	102 – 105 %	94 – 99 %
Expected dividend yield	0	0	0

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NOTES TO FINANCIAL STATEMENTS

3. Summary of Significant Accounting Policies – (continued)

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, 2010, 2009, and 2008 consist of the following:

	December 31,		
	2010	2009	2008
Stock options	4,566,935	3,534,686	2,738,089
Unvested restricted stock	348,753	1,467,167	586,500
Warrants	15,912,142	16,020,147	5,039,659
	20,827,830	21,022,000	8,364,248

New Accounting Pronouncements

In January 2010, the FASB issued Accounting Standards Update ("ASU") No. 2010-06 *Fair Value Measurements and Disclosures* (Topic 820) which improves disclosures about fair value measurements. More specifically, ASU 2010-06 updates Topic 820-10 to require disclosure of transfers in and out of levels 1 and 2 and the reason for the transfers. Additionally, it requires separate reporting of purchases, sales, issuances and settlements for level 3. This update is effective for periods beginning after December 15, 2009. The adoption of this standard did not have an impact on our financial position or results of operations.

In April 2009, the United States Securities and Exchange Commission ("SEC") issued Final Rule No. 33-9002, *Interactive Data to Improve Financial Reporting* , which requires companies to submit financial statements in XBRL (extensible business reporting language) format with their SEC filings. The Company will be required to provide interactive data reports starting with their first quarterly report for fiscal periods ending on or after June 15, 2011. The adoption of this standard will not have an impact on our financial position or results of operations.

4. Property and Equipment, net

Property and equipment, net consist of the following:

	December 31,	
(in thousands)	2010	2009
Office and computer equipment	$ 520	$ 383
Software	337	330
Leasehold improvements	12	398
Manufacturing equipment	439	12
	1,308	1,123
Less accumulated depreciation	(1,055)	(868)
Property and equipment, net	$ 253	$ 255

Depreciation and amortization charged to the Statement of Operations for the years ended December 31, 2010, 2009, 2008 and from September 9, 2003 (date of inception) to December 31, 2010 (in thousands) was: $188, $330, $388, and $1,649, respectively.

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NOTES TO FINANCIAL STATEMENTS

5. Accrued Expenses

Accrued expenses consist of the following:

	December 31,	
(in thousands)	2010	2009
Professional services	$ 408	$ 230
Clinical consulting services	1,162	408
NASDAQ fees	—	159
Manufacturing services	121	120
Accrued vacation	186	109
Insurance	—	104
Research and development consulting services	—	63
Payroll taxes	249	29
Employee compensation	412	4
Other	—	35
Accrued expenses	$ 2,538	$ 1,261

6. 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 managing member of Horizon BioMedical Ventures, LLC (“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 (“Mibars”) and to Dr. Rosenwald and his designees (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 (“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.

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 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 twelve (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

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NOTES TO FINANCIAL STATEMENTS

6. Related Party Transactions – (continued)

$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 percent 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.

During the year ended December 31, 2010, there were no related party transactions.

7. Commitments and Contingencies

Operating Leases

In May 2005, the Company entered into an operating lease for a new office in New York, NY consisting of 2,580 square feet. The lease expired in June 2010. In connection with this lease agreement, the Company entered into a letter of credit in the amount of $60 thousand naming the Company's landlord as beneficiary. In May 2010, the Company renewed the operating lease through June 2014. As of December 31, 2009 and 2010, the Company classified the $60 thousand letter of credit as other non-current assets on the balance sheet.

ZIOPHARM Oncology, Inc.
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NOTES TO FINANCIAL STATEMENTS

7. Commitments and Contingencies – (continued)

In August 2006, the Company entered into an operating lease for new office space in New Haven, CT consisting of 2,200 square feet. The lease expired in September 2009. In connection with this lease agreement the Company provided a security deposit of $4 thousand. This lease was terminated in December 2008 in consideration of a payment of $12 thousand, equaling three months rent. As of December 31, 2008, the Company had no further obligations under this agreement.

In April 2007, the Company entered into a sublease for new office space in Charlestown, MA consisting of 4,872 square feet. The lease expired in April 2010. In connection with this lease agreement the Company provided a security deposit of $41 thousand. At December 31, 2009, the security deposit was reclassified to prepaid expenses and other current assets on the balance sheet due to the imminent expiration date of the lease. In June 2010, the Company renewed the sublease for office space in Charlestown, MA reducing the space to 3,782 square feet. The lease expires in August 2012. The lease was further amended in December 2010 to increase the space to 4,425 square feet. At December 31, 2010, the Company has classified the $41 thousand security deposit in long-term deposits on the balance sheet.

In August 2007, the Company entered into a sublease for new office space in Charlestown, MA consisting of 6,959 square feet. The lease expires in August 2012. In connection with this lease agreement the Company provided a security deposit of $46 thousand. At December 31, 2010 and 2009, the Company has classified this amount in long-term deposits on the balance sheet.

Future minimum lease payments under operating leases as of December 31, 2010 are as follows (in thousands):

2011	$	434
2012		341
2013		139
2014		70
Total future minimum lease payments	$	984

Total rent expense was approximately $398 thousand, $456 thousand, $506 thousand, and $2.5 million for the years ended December 31, 2010, 2009, 2008 and from September 9, 2003 (date of inception) to December 31, 2010, 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, 2010 and 2009 of $87 thousand and $111 thousand, respectively, which is recorded in deferred rent on the balance sheet.

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 (collectively, 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.

ZIOPHARM Oncology, Inc.
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NOTES TO FINANCIAL STATEMENTS

7. Commitments and Contingencies – (continued)

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 ("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 I 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 ("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 I clinical trial and $250 thousand that was paid in 2006 upon the dosing of the first patient in the Registrant-sponsored Phase II 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, 2008, 2009 or 2010.

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.

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 II 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

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NOTES TO FINANCIAL STATEMENTS

7. Commitments and Contingencies – (continued)

$300 thousand milestone payment and vested 6,904 stock options upon achieving Phase III milestones. 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.

License Agreement with Southern Research Institute ("SRI")

On December 22, 2004, the Company entered into an Option Agreement with SRI (the "Option Agreement"), 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, 2008 and 2009 and the 2010. 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 during the years ended December 31, 2008, 2009 or 2010.

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 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 manufacturer indibulin. No milestones under the license agreement were reached or expensed during the years ended December 31, 2008, 2009 or 2010.

ZIOPHARM Oncology, Inc.
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NOTES TO FINANCIAL STATEMENTS

7. Commitments and Contingencies – (continued)

Collaboration Agreement with Harmon Hill, LLC

On April 8, 2008, the Company signed a collaboration agreement for Harmon Hill, LLC ("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 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 EMEA 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 7, 2009. During 2010, the agreement was extended through April 7, 2011. The Company expensed $240 thousand during the years ended December 31, 2009 and 2010 for consulting services per the aforementioned agreement. No milestones under the collaboration agreement were reached or expensed during the years ended December 31, 2008, 2009 or 2010.

CRO Services Agreement with PPD Development, L. P.

The Company and PPD Development, L. P. ("PPD") are parties to a master clinical research organization services agreement dated January 29, 2010 and a related work order dated June 25, 2010 under which PPD provides clinical research organization ("CRO") services in support of the Company's clinical trials. PPD is entitled to cumulative payments of up to $21.5 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.

8. Warrants

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

On January 1, 2009, the Company adopted a newly issued accounting standard which provides 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. In applying the methodology, the Company concluded that certain warrants issued by the Company in May 2005 have terms that do not meet the criteria to be considered indexed to the Company's own stock and therefore were re-classified from the equity section to the liability section of the Balance Sheets as of January 1, 2009. Accounting standards require that the warrants be valued 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 Black-Scholes 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

ZIOPHARM Oncology, Inc.
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NOTES TO FINANCIAL STATEMENTS

8. Warrants – (continued)

valued at $72 thousand on January 1, 2009, when the accounting standard was adopted. The reclassification attributed to the new standard had the following cumulative effect on the Balance Sheets:

	Liabilities	Stockholders' Equity	
(in thousands)	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)

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 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 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, 2010, the liability-classified warrants were valued at $27.3 million using a Black-Scholes valuation model. The decrease in the fair value of the warrant liabilities of $8.9 million for the year ended December 31, 2010 was charged to other income (expense) in the Statements of Operations.

On December 31, 2009, the liability-classified warrants were valued at $18.5 million using a Black-Scholes valuation model. The decrease in the fair value of the warrant liabilities of $4.5 million for the year ended December 31, 2009 was charged to other income (expense) in the Statements of Operations.

The following Black-Scholes pricing assumptions were used at December 31, 2010 and 2009:

	December 31, 2010	December 31, 2009
Risk-free interest rate	0.42 – 1.48%	1.37 – 2.65%
Expected life in years	1.42 – 3.92	2.42 – 4.92
Expected volatility	0.75 – 1.16%	105%
Expected dividend yield	0	0

ZIOPHARM Oncology, Inc.
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NOTES TO FINANCIAL STATEMENTS

8. 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 are 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 2007 Placement Agents, 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%.

No warrants were issued or exercised in the year ending December 31, 2008.

In connection with the 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 $4,207 thousand using a Black-Scholes model with the following assumptions: expected volatility of 105%, risk free interest rate of 2.41%, expected life of five 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.

ZIOPHARM Oncology, Inc.
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NOTES TO FINANCIAL STATEMENTS

8. Warrants – (continued)

The following is a summary of warrants outstanding as of December 31, 2010.

Number of Warrants	Issued in Connection With	Exercise Price	Expiration Date
62,621	Services performed	$ 4.75	December 23, 2011
399,936	Placement warrants for services performed	$ 3.93	May 31, 2012
2,397,392	Investor warrants	$ 5.56	May 3, 2011
747,170	Placement warrants for services performed	$ 5.09	May 3, 2013
1,182,015	Investor warrants	$ 5.75	February 23, 2012
177,302	Placement warrants for services performed	$ 5.75	February 23, 2012
2,635,351	Investor warrants	$ 2.04	September 15, 2014
119,835	Placement warrants for services performed	$ 2.04	September 15, 2014
7,726,000	Investor warrants	$ 4.02	December 9, 2014
464,520	Underwriter warrants for services performed	$ 4.02	December 9, 2014
15,912,142			

9. 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, 2010 and 2009 are as follows:

	December 31,	
(in thousands)	2010	2009
Net operating loss carryforwards	$ 3,320	$ 7,687
Start-up and organizational costs	33,712	24,193
Research and development credit carryforwards	1,570	1,869
Stock compensation	589	501
Depreciation	140	112
Other	577	384
	39,908	34,746
Less valuation allowance	(39,908)	(34,746)
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, 2010, the Company has aggregate net operating loss carryforwards for federal tax purposes of approximately $7.8 million available to offset future federal and state taxable income to the extent permitted under the Internal Revenue Code (“IRC”), expiring in varying amounts through 2029. Additionally, the Company has approximately $1.7 million of research and development credits at December 31, 2010, expiring in varying amounts through 2029, 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 operating loss carryforwards for the year ended December 31, 2010 includes approximately $3.2 million resulting from excess tax deductions from stock options. Pursuant to accounting standards, the deferred tax asset relating to excess tax benefits generated from exercises was not recognized for financial

statement purposes.

ZIOPHARM Oncology, Inc.
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NOTES TO FINANCIAL STATEMENTS

9. Income Taxes – (continued)

Section 382 of the Internal Revenue Code of 1986, as amended, provides limits to which a corporation that has undergone a change in ownership (as defined) can utilize any net operating loss ("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 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 $5.1 million primarily due to net operating loss carryforward, 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:

	December 31,		
(in thousands)	**2010**	**2009**	**2008**
Federal income tax at statutory rates	34.0%	34.0%	34.0%
State income tax, net of federal tax benefit	4.3%	4.8%	6.1%
Research and development credits	0.0%	2.4%	2.5%
Stock compensation	-0.1%	-8.2%	-1.7%
Uncertain tax position adjustment	-15.4%	0.0%	0.0%
Change in warrant value	-9.3%	0.0%	0.0%
Federal R&D tax grant	0.8%	0.0%	0.0%
Other	1.5%	-0.7%	-0.5%
Increase in valuation allowance	-15.8%	-32.3%	-40.4%
Effective tax rate	0.0%	0.0%	0.0%

The Company adopted a new accounting standard relating to accounting for uncertain tax positions on January 1, 2007. The standard 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 the standard. A summary of the company's adjustments to its uncertain tax positions in the years ended December 31, 2010, 2009, and 2008 are as follows:

(in thousands)	
Balance at December 31, 2007	$ 238
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, 2008	238
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	—

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, 2010	$ 275

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NOTES TO FINANCIAL STATEMENTS

9. Income Taxes – (continued)

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 2010.

10. Preferred Stock and Stockholders' Equity

On April 26, 2006, the date of the Company's annual stockholders meeting, 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) (the "Preferred Stock").

Common Stock of ZIOPHARM Oncology, Inc.

As of December 31, 2010, the Company has 48,466,562 shares of common stock issued and outstanding and no shares of Preferred 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.

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).

ZIOPHARM Oncology, Inc.
(a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

10. Preferred Stock and Stockholders' Equity – (continued)

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).

Series A Preferred Stock of ZIOPHARM, Inc.

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

Preferred Stock of ZIOPHARM Oncology, Inc.

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.

11. Stock Option Plan

The Company adopted the 2003 Stock Option Plan (the "Plan") in 2003, under which the Company initially reserved for the issuance of 1,252,436 shares of its common stock. The 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, 2006, the dates of the Company's annual stockholders meetings during such years, the Company's stockholders approved amendments to the 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.

As of December 31, 2010, the Company had outstanding options issued to its employees to purchase up to 3,706,511 shares of the Company's common stock, to its directors to purchase up to 855,174 shares of the Company's common stock, as well as options to consultants in connection with services rendered to purchase up to 5,250 shares of the Company's common stock. In December 2008, 5,000 options were granted to a consultant and vested ratably over a two-year period, contingent upon performance of future consulting services during that time.

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 method 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 7 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 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 III milestones.

ZIOPHARM Oncology, Inc.
(a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

11. Stock Option Plan – (continued)

Proceeds from the 2010, 2009, and 2008 exercises amounted to $234, $73, and $0 thousand, respectively. The intrinsic value of these options amounted to $880, $238, and $0 thousand for years ended December 31, 2010, 2009 and 2008, respectively.

Transactions under the Plan for the years ending December 31, 2010, 2009, and 2008 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, 2007	2,797,000	$ 3.81		
Granted	384,000	1.64		
Exercised	—	—		
Cancelled	(442,911)	4.31		
Outstanding, December 31, 2008	2,738,089	3.43		
Granted	1,324,000	1.53		
Exercised	(102,564)	0.71		
Cancelled	(424,839)	3.19		
Outstanding, December 31, 2009	3,534,686	2.82		
Granted	1,293,000	4.55		
Exercised	(196,167)	1.19		
Cancelled	(64,584)	4.36		
Outstanding, December 31, 2010	4,566,935	$ 3.39	7.40	$ 6,459
Options exercisable, December 31, 2010	2,939,435	$ 2.93	6.16	$ 5,597
Options available for future grant	2,076,651			

At December 31, 2010, total unrecognized compensation costs related to non-vested stock options outstanding amounted to $4.6 million. The cost is expected to be recognized over a weighted-average period of 1.87 years.

ZIOPHARM Oncology, Inc.
(a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

11. Stock Option Plan – (continued)

Restricted Stock

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 vest 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 of restricted stock to its non-employee directors, which will vest 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 vest 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 vesting 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, 2010, 2009 and 2008, $2.4 million $1.0 million and $289 thousand of compensation expense was recognized, respectively. 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 pay for payroll taxes. A summary of the status of non-vested restricted stock as of December 31, 2010, 2009 and 2008 is as follows:

	Number of Shares	Weighted-Average Grant Date Fair Value
Non-vested, December 31, 2007	70,000	$ 2.73
Granted	586,500	0.83
Vested	(45,000)	2.73
Cancelled	(25,000)	2.73
Non-vested, December 31, 2008	586,500	1.15
Granted	1,400,500	2.28
Vested	(450,333)	0.97
Cancelled	(69,500)	0.83
Non-vested, December 31, 2009	1,467,167	2.30
Granted	115,000	5.15
Vested	(1,182,164)	2.19
Cancelled	(51,250)	4.40
Non-vested, December 31, 2010	348,753	$ 3.32

As of December 31, 2010, there was $827 thousand of total unrecognized stock-based compensation expense related to non-vested restricted stock arrangements granted under the 2003 Plan. The expense is expected to be recognized over a weighted-average period of 1.38 years.

12. Employee Benefit Plan

The Company sponsors a qualified 401(k) Retirement Plan (the “Plan”) under which employees are allowed to contribute certain percentages of their pay, up to the maximum allowed under Section 401(k) of the Internal Revenue Code. The Company may make contributions to these plans at its discretion. The Company contributed approximately $21 thousand, $35 thousand, and $113 thousand to this plan during the years ended December 31, 2010, 2009, and 2008 respectively.

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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 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 of Form 8-K 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 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 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 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 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 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 filed March 20, 2006).
4.8	Form of Common Stock Purchase Warrant issued to investors in connection with the Registrant's 2006 private placement (incorporated by reference to Exhibit 4.1 to the Registrant's Current Report of Form 8-K filed May 3, 2006).
4.9	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 of Form 8-K filed May 3, 2006).
4.10	Form of Warrant to Purchase Common Stock issued to investors in connection with the Registrant's February 2007 private placement (incorporated by reference to Exhibit 4.1 to the Registrant's Current Report of Form 8-K filed February 26, 2007).
4.11	Form of Warrant to Purchase Common Stock issued to placement agents in connection with the Registrant's February 2007 private placement (incorporated by reference to Exhibit 4.2 to the Registrant's Current Report of Form 8-K filed February 26, 2007).

Exhibit No.	Description of Document
4.12	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 of Form 8-K filed September 15, 2009).
4.13	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 of Form 8-K filed September 15, 2009).
4.14	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 of Form 8-K filed December 8, 2009).
4.15	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 of Form 8-K filed December 8, 2009).
10.1	ZIOPHARM Oncology, Inc. Amended and Restated 2003 Stock Incentive Plan.
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 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 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 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 of Form 8-K filed December 18, 2007).
10.6	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).
10.7	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).
10.8	Employment Agreement dated as of June 25, 2008 between the Registrant and Richard E. Bagley (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q filed July 30, 2008).
10.9	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).++
10.10	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).++
10.11	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 filed November 13, 2006).++
10.12	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 filed November 13, 2006).++

Exhibit No.	Description of Document
10.13	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).
10.14	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).+
10.15	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).
10.16	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 of Form 8-K filed May 3, 2006).
10.17	Form of Securities Purchase Agreement by and between the Registrant and investors in the Registrant's February 2007 private placement (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report of Form 8-K filed February 26, 2007).
10.18	Form of Registration Rights Agreement by and between the Registrant and investors in the Registrant's February 2007 private placement (incorporated by reference to Exhibit 10.2 to the Registrant's Current Report of Form 8-K filed February 26, 2007).
10.19	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 of Form 8-K filed September 15, 2009).
10.20	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 of Form 8-K filed September 15, 2009).
10.21	Engagement Letter dated August 7, 2009 by and between the Registrant and Rodman & Renshaw, LLC.
10.22	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).
10.23	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).
10.24	Registration Rights Agreement dated January 12, 2011 by and between the Registrant and Intrexon Corporation.
23.1	Consent of Independent Registered Public Accounting Firm — McGladrey & Pullen, LLP
23.2	Consent of Independent Registered Public Accounting Firm — Caturano and Company, Inc.
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 Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

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

++ 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.

Exhibit No.	Description of Document
10.1	ZIOPHARM Oncology, Inc. Amended and Restated 2003 Stock Incentive Plan.
10.21	Engagement Letter dated August 7, 2009 by and between the Registrant and Rodman & Renshaw, LLC.
10.24	Registration Rights Agreement dated January 12, 2011 by and between the Registrant and Intrexon Corporation.
23.1	Consent of Independent Registered Public Accounting Firm — McGladrey & Pullen, LLP
23.2	Consent of Independent Registered Public Accounting Firm — Caturano and Company, Inc.
31.1	Certification of Chief Executive Officer pursuant to Securities Exchange Act Rule 13a-15(e)/ 15d-15(e) as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of Chief Financial Officer pursuant to Securities Exchange Act Rule 13a-15(e)/ 15d-15(e) 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 Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

ZIOPHARM ONCOLOGY, INC.
AMENDED AND RESTATED
2003 STOCK OPTION PLAN

(Amended and restated as of September 1, 2010)

1. Purpose . The purpose of the 2003 Stock Option Plan (the "Plan") of ZIOPHARM Oncology, Inc. (the "Company") is to increase stockholder value and to advance the interests of the Company by furnishing a variety of economic incentives ("Incentives") designed to attract, retain and motivate employees, certain key consultants and directors of the Company. Incentives may consist of opportunities to purchase or receive shares of Common Stock, $0.001 par value per share, of the Company ("Common Stock") on terms determined under this Plan.

2. Administration . The Plan shall be administered by the board of directors of the Company (the "Board of Directors") or by a stock option or compensation committee (the "Committee") of the Board of Directors. The Committee shall consist of not less than two directors of the Company and shall be appointed from time to time by the Board of Directors. During any time period during which the Company has a class of equity securities registered under Section 12 of the Securities Exchange Act of 1934 (including the regulations promulgated thereunder, the "1934 Act"), each member of the Committee shall be (i) a "non-employee director" within the meaning of Rule 16b-3 of the Securities Exchange Act of 1934 (including the regulations promulgated thereunder, the "1934 Act") (a "Non-Employee Director"), and (ii) shall be an "outside director" within the meaning of Section 162(m) under the Internal Revenue Code of 1986, as amended (the "Code") and the regulations promulgated thereunder. The Committee shall have complete authority to award Incentives under the Plan, to interpret the Plan, and to make any other determination which it believes necessary and advisable for the proper administration of the Plan. The Committee's decisions and matters relating to the Plan shall be final and conclusive on the Company and its participants. If at any time there is no stock option or compensation committee, the term "Committee", as used in the Plan, shall refer to the Board of Directors.

3. Eligible Participants . Officers of the Company, employees of the Company or its subsidiaries, members of the Board of Directors, and consultants or other independent contractors who provide services to the Company or its subsidiaries shall be eligible to receive Incentives under the Plan when designated by the Committee. Participants may be designated individually or by groups or categories (for example, by pay grade) as the Committee deems appropriate. Participation by officers of the Company or its subsidiaries and any performance objectives relating to such officers must be approved by the Committee. Participation by others and any performance objectives relating to others may be approved by groups or categories (for example, by pay grade) and authority to designate participants who are not officers and to set or modify such targets may be delegated.

4. Types of Incentives . Incentives under the Plan may be granted in any one or a combination of the following forms: (a) incentive stock options and non-statutory stock options (section 6); (b) stock appreciation rights ("SARs") (section 7); (c) stock awards (section 8); (d) restricted stock (section 8); and (e) performance shares (section 9).

5. Shares Subject to the Plan .

5.1. Number of Shares . Subject to adjustment as provided in Section 10.6, the number of shares of Common Stock which may be issued under the Plan shall not exceed 9,002,436 shares of Common Stock. Shares of Common Stock that are issued under the Plan or are subject to outstanding Incentives will be applied to reduce the maximum number of shares of Common Stock remaining available for issuance under the Plan.

5.2. Cancellation . To the extent that cash in lieu of shares of Common Stock is delivered upon the exercise of an SAR pursuant to Section 7.4, the Company shall be deemed, for purposes of applying the limitation on the number of shares, to have issued the greater of the number of shares of Common Stock which it was entitled to issue upon such exercise or on the exercise of any related option. In the event that an Incentive (including without limitation any stock option, SAR, restricted stock or performance share) granted hereunder expires or is terminated or canceled unexercised as to any shares of Common Stock, such shares may again be issued under the Plan either pursuant to stock options, SARs, restricted stock, performance shares or otherwise. In the event that shares of Common Stock are issued as performance shares, restricted stock or pursuant to a stock award and thereafter are forfeited or reacquired by the Company pursuant to rights reserved upon issuance thereof, such forfeited and reacquired shares may again be issued under the Plan, either as performance shares, restricted stock, pursuant to stock awards or otherwise. Subject to Section 10.14, the Committee may also determine to cancel, and agree to the cancellation of, Incentives in order to make a participant eligible for the grant of Incentives at a lower price than the Incentive to be canceled.

5.3. Type of Common Stock . Common Stock issued under the Plan in connection with stock options, SARs, performance shares, restricted stock or stock awards, may be authorized and unissued shares or treasury stock, as designated by the Committee.

6. Stock Options . A stock option is a right to purchase shares of Common Stock from the Company. Each stock option granted by the Committee under this Plan shall be subject to the following terms and conditions:

6.1. Price . The option price per share shall be determined by the Committee, subject to adjustment under Section 10.6.

6.2. Number . The number of shares of Common Stock subject to the option shall be determined by the Committee, subject to adjustment as provided in Section 10.6. The number of shares of Common Stock subject to a stock option shall be reduced in the same proportion that the holder thereof exercises a SAR if any SAR is granted in conjunction with or related to the stock option.

6.3. Duration and Time for Exercise . Subject to earlier termination as provided in Section 10.4, the term of each stock option shall be determined by the Committee but shall not exceed ten years and one day from the date of grant. Each stock option shall become exercisable at such time or times during its term as shall be determined by the Committee at the time of grant. The Committee may accelerate the exercisability of any stock option. Subject to the foregoing and to Section 10.14, with the approval of the Committee, all or any part of the shares of Common Stock with respect to which the right to purchase has accrued may be purchased by the Company at the time of such accrual or at any time or times thereafter during the term of the option.

6.4. Manner of Exercise . A stock option may be exercised, in whole or in part, by giving written notice to the Company, specifying the number of shares of Common Stock to be purchased and accompanied by the full purchase price for such shares. The option price shall be payable (a) in United States dollars upon exercise of the option and may be paid by cash, uncertified or certified check or bank draft; (b) unless otherwise provided in the option agreement, by delivery of shares of Common Stock in payment of all or any part of the option price, which shares shall be valued for this purpose at the Fair Market Value on the date such option is exercised; or (c) unless otherwise provided in the option agreement, by instructing the Company to withhold from the shares of Common Stock issuable upon exercise of the stock option shares of Common Stock in payment of all or any part of the exercise price and/or any related withholding tax obligations, which shares shall be valued for this purpose at the Fair Market Value or in such other manner as may be authorized from time to time by the Committee. Prior to the issuance of shares of Common Stock upon the exercise of a stock option, a participant shall have no rights as a stockholder.

6.5. Incentive Stock Options . Notwithstanding anything in the Plan to the contrary, the following additional provisions shall apply to the grant of stock options which are intended to qualify as Incentive Stock Options (as such term is defined in Section 422 of the Code):

(a) The aggregate Fair Market Value (determined as of the time the option is granted) of the shares of Common Stock with respect to which Incentive Stock Options are exercisable for the first time by any participant during any calendar year (under all of the Company's plans) shall not exceed $100,000. The determination will be made by taking Incentive Stock Options into account in the order in which they were granted. If such excess only applies to a portion of an Incentive Stock Option, the Committee, in its discretion, will designate which shares will be treated as shares to be acquired upon exercise of an Incentive Stock Option.

(b) Any option agreement evidencing the grant of an Incentive Stock Option authorized under the Plan shall contain such other provisions as the Committee shall deem advisable, but shall in all events be consistent with and contain all provisions required in order to qualify the options as Incentive Stock Options.

(c) All Incentive Stock Options must be granted within ten years from the earlier of the date on which this Plan was adopted by Board of Directors or the date this Plan was approved by the stockholders.

(d) Unless sooner exercised, all Incentive Stock Options shall expire no later than 10 years after the date of grant.

(e) The option price for Incentive Stock Options shall be not less than the Fair Market Value of the Common Stock subject to the option on the date of grant.

(f) If Incentive Stock Options are granted to any participant who, at the time such option is granted, would own (within the meaning of Section 422 of the Code) stock possessing more than 10% of the total combined voting power of all classes of stock of the employer corporation or of its parent or subsidiary corporation, (i) the option price for such Incentive Stock Options shall be not less than 110% of the Fair Market Value of the Common Stock subject to the option on the date of grant and (ii) such Incentive Stock Options shall expire no later than five years after the date of grant.

(g) Incentive Stock Options and rights granted in connection therewith shall not be transferable by the holder thereof other than by will or by the laws of descent and distribution, shall not otherwise be assigned, pledged or hypothecated in any way, and shall not be subject to execution, attachment or similar process. Upon any attempt to transfer an Incentive Stock Option, other than by will or by the laws of descent and distribution, or to assign, pledge or hypothecate or otherwise dispose of an Incentive Stock Option or of any rights granted in connection therewith, or upon the levy of any attachment or similar process upon an Incentive Stock Option or such rights, the Incentive Stock Option and such rights shall immediately become null and void. Incentive Stock Options shall be exercised during a participant's lifetime only by the participant or by his or her guardian or legal representative.

6.6 Right of Redemption . The agreement with the recipient evidencing a stock option grant may include a provision whereby the Company may elect, prior to the date of the first registration of an equity security of the Company pursuant to the Exchange Act of 1934, as amended, to repurchase from a former Company employee, director, consultant, advisor or other independent contractor, and their respective successors and assigns, all or any part of the shares of Common Stock received by a participant pursuant to the exercise of a stock option. Any such repurchase must be made no earlier than six months following the termination of the holder's relationship with the Company giving rise to the stock option grant and at fair market value, as determined by the Committee, on such date of redemption.

7. Stock Appreciation Rights . An SAR is a right to receive, without payment to the Company, a number of shares of Common Stock, cash or any combination thereof, the amount of which is determined pursuant to the formula set forth in Section 7.4. An SAR may be granted (a) with respect to any stock option granted under this Plan, either concurrently with the grant of such stock option or at such later time as determined by the Committee (as to all or any portion of the shares of Common Stock subject to the stock option), or (b) alone, without reference to any related stock option. Each SAR granted by the Committee under this Plan shall be subject to the following terms and conditions:

7.1. Number . Each SAR granted to any participant shall relate to such number of shares of Common Stock as shall be determined by the Committee, subject to adjustment as provided in Section 10.6. In the case of an SAR granted with respect to a stock option, the number of shares of Common Stock to which the SAR pertains shall be reduced in the same proportion that the holder of the option exercises the related stock option.

7.2. Duration . Subject to earlier termination as provided in Section 10.4, the term of each SAR shall be determined by the Committee but shall not exceed ten years and one day from the date of grant. Unless otherwise provided by the Committee, each SAR shall become exercisable at such time or times, to such extent and upon such conditions as the stock option, if any, to which it relates is exercisable. The Committee may in its discretion accelerate the exercisability of any SAR.

7.3. Exercise . An SAR may be exercised, in whole or in part, by giving written notice to the Company, specifying the number of SARs which the holder wishes to exercise. Upon receipt of such written notice, the Company shall, within 90 days thereafter, deliver to the exercising holder certificates for the shares of Common Stock or cash or both, as determined by the Committee, to which the holder is entitled pursuant to Section 7.4.

7.4. Payment . Subject to the right of the Committee to deliver cash in lieu of shares of Common Stock (which, as it pertains to officers and directors of the Company, shall comply with all requirements of the 1934 Act), the number of shares of Common Stock which shall be issuable upon the exercise of an SAR shall be determined by dividing:

(a) the number of shares of Common Stock as to which the SAR is exercised multiplied by the amount of the appreciation in such shares (for this purpose, the "appreciation" shall be the amount by which the Fair Market Value of the shares of Common Stock subject to the SAR on the exercise date exceeds (1) in the case of an SAR related to a stock option, the purchase price of the shares of Common Stock under the stock option or (2) in the case of an SAR granted alone, without reference to a related stock option, an amount which shall be determined by the Committee at the time of grant, subject to adjustment under Section 10.6); by

(b) the Fair Market Value of a share of Common Stock on the exercise date.

In lieu of issuing shares of Common Stock upon the exercise of a SAR, the Committee may elect to pay the holder of the SAR cash equal to the Fair Market Value on the exercise date of any or all of the shares which would otherwise be issuable. No fractional shares of Common Stock shall be issued upon the exercise of an SAR; instead, the holder of the SAR shall be entitled to receive a cash adjustment equal to the same fraction of the Fair Market Value of a share of Common Stock on the exercise date or to purchase the portion necessary to make a whole share at its Fair Market Value on the date of exercise.

8. Stock Awards and Restricted Stock . A stock award consists of the transfer by the Company to a participant of shares of Common Stock, without other payment therefor, as additional compensation for services to the Company. Restricted stock consists of shares of Common Stock which are sold or transferred by the Company to a participant at a price determined by the Committee (which price shall be at least equal to the minimum price required by applicable law for the issuance of a share of Common Stock) and subject to restrictions on their sale or other transfer by the participant. The transfer of Common Stock pursuant to stock awards and the transfer and sale of restricted stock shall be subject to the following terms and conditions:

8.1. Number of Shares . The number of shares to be transferred or sold by the Company to a participant pursuant to a stock award or as restricted stock shall be determined by the Committee.

8.2. Sale Price . The Committee shall determine the price, if any, at which shares of restricted stock shall be sold to a participant, which may vary from time to time and among participants and which may be below the Fair Market Value of such shares of Common Stock at the date of sale.

8.3. Restrictions . All shares of restricted stock transferred or sold hereunder shall be subject to such restrictions as the Committee may determine, which restrictions shall lapse no more quickly than ratably over a period of at least three years from the date of grant, including, without limitation any or all of the following:

(a) a prohibition against the sale, transfer, pledge or other encumbrance of the shares of restricted stock, such prohibition to lapse at such time or times as the Committee shall determine (whether in annual or more frequent installments, at the time of the death, disability or retirement of the holder of such shares, or otherwise);

(b) a requirement that the holder of shares of restricted stock forfeit, or (in the case of shares sold to a participant) resell back to the Company at his or her cost, all or a part of such shares in the event of termination of his or her employment or consulting engagement during any period in which such shares are subject to restrictions;

(c) such other conditions or restrictions as the Committee may deem advisable.

8.4. Escrow . In order to enforce the restrictions imposed by the Committee pursuant to Section 8.3, the participant receiving restricted stock shall enter into an agreement with the Company setting forth the conditions of the grant. Shares of restricted stock shall be registered in the name of the participant and deposited, together with a stock power endorsed in blank, with the Company. Each such certificate shall bear a legend in substantially the following form:

The transferability of this certificate and the shares of Common Stock represented by it are subject to the terms and conditions (including conditions of forfeiture) contained in the Amended and Restated 2003 Stock Option Plan of ZIOPHARM Oncology, Inc. (the “Company”), and an agreement entered into between the registered owner and the Company. A copy of the Plan and the agreement is on file in the office of the secretary of the Company.

8.5. End of Restrictions . Subject to Section 10.5, at the end of any time period during which the shares of restricted stock are subject to forfeiture and restrictions on transfer, such shares will be delivered free of all restrictions to the participant or to the participant's legal representative, beneficiary or heir.

8.6. Stockholder . Subject to the terms and conditions of the Plan, each participant receiving restricted stock shall have all the rights of a stockholder with respect to shares of stock during any period in which such shares are subject to forfeiture and restrictions on transfer, including without limitation, the right to vote such shares. Dividends paid in cash or property other than Common Stock with respect to shares of restricted stock shall be paid to the participant currently.

9. Performance Shares . A performance share consists of an award which shall be paid in shares of Common Stock, as described below. The grant of performance share shall be subject to such terms and conditions as the Committee deems appropriate, including the following:

9.1. Performance Objectives . Each performance share will be subject to performance objectives for the Company or one of its operating units to be achieved by the end of a specified period, which period shall be at lease one year in length. The number of performance shares granted shall be determined by the Committee and may be subject to such terms and conditions, as the Committee shall determine. If the performance objectives are achieved, each participant will be paid in shares of Common Stock or cash. If such objectives are not met, each grant of performance shares may provide for lesser payments in accordance with formulas established in the award.

9.2. Not Stockholder . The grant of performance shares to a participant shall not create any rights in such participant as a stockholder of the Company, until the payment of shares of Common Stock with respect to an award.

9.3. No Adjustments . No adjustment shall be made in performance shares granted on account of cash dividends which may be paid or other rights which may be issued to the holders of Common Stock prior to the end of any period for which performance objectives were established.

9.4. Expiration of Performance Share . If any participant's employment or consulting engagement with the Company is terminated for any reason other than normal retirement, death or disability prior to the achievement of the participant's stated performance objectives, all the participant's rights on the performance shares shall expire and terminate unless otherwise determined by the Committee. In the event of termination of employment or consulting by reason of death, disability, or normal retirement, the Committee, in its own discretion may determine what portions, if any, of the performance shares should be paid to the participant.

10. General .

10.1. Effective Date . The Plan will become effective upon its approval by the Company's stockholders. Unless approved by the stockholders within one year after the date of the Plan's adoption by the Board of Directors, the Plan shall not be effective for any purpose.

10.2. Duration . The Plan shall remain in effect until all Incentives granted under the Plan have either been satisfied by the issuance of shares of Common Stock or the payment of cash or been terminated under the terms of the Plan and all restrictions imposed on shares of Common Stock in connection with their issuance under the Plan have lapsed. No Incentives may be granted under the Plan after the tenth anniversary of the date the Plan is approved by the stockholders of the Company.

10.3. Limited Transferability of Incentives . Except as otherwise provided in Section 6.5 or in the agreement evidencing the grant of an Incentive: (a) no stock option, SAR, restricted stock or performance award may be transferred, pledged or assigned by the holder thereof except (i) in the event of the holder’s death, by will or the laws of descent and distribution to the limited extent provided in the Plan or the Incentive, or (ii) pursuant to a qualified domestic relations order as defined by the Code or Title I of the Employee Retirement Income Security Act, or the rules thereunder, and the Company shall not be required to recognize any attempted assignment of such rights by any participant; *provided, however,* that stock options may be transferred by the holder thereof to “family members” of the holder who have acquired such stock options through a gift or domestic relations order, or otherwise in transactions that do not qualify as prohibited transfers for value, as contemplated by the General Instructions to the registration statement on Form S-8 under the Securities Act of 1933, as amended; and (b) during a participant’s lifetime, a stock option or SAR may be exercised only by him or her, by his or her guardian or legal representative or by any of the transferees permitted by this Section.

10.4. Effect of Termination or Death . In the event that a participant ceases to be an employee of or consultant to the Company for any reason, including death or disability, any Incentives may be exercised (or payments or shares may be delivered thereunder) or shall expire at such times as may be determined by the Committee.

10.5. Additional Condition . Notwithstanding anything in this Plan to the contrary: (a) the Company may, if it shall determine it necessary or desirable for any reason, at the time of award of any Incentive or the issuance of any shares of Common Stock pursuant to any Incentive, require the recipient of the Incentive, as a condition to the receipt thereof or to the receipt of shares of Common Stock issued pursuant thereto, to deliver to the Company a written representation of present intention to acquire the Incentive or the shares of Common Stock issued pursuant thereto for his or her own account for investment and not for distribution; and (b) if at any time the Company further determines, in its sole discretion, that the listing, registration or qualification (or any updating of any such document) of any Incentive or the shares of Common Stock issuable pursuant thereto is necessary on any securities exchange or under any federal or state securities or blue sky law, or that the consent or approval of any governmental regulatory body is necessary or desirable as a condition of, or in connection with the award of any Incentive, the issuance of shares of Common Stock pursuant thereto, or the removal of any restrictions imposed on such shares, such Incentive shall not be awarded or such shares of Common Stock shall not be issued or such restrictions shall not be removed, as the case may be, in whole or in part, unless such listing, registration, qualification, consent or approval shall have been effected or obtained free of any conditions not acceptable to the Company.

10.6. Adjustment . In the event of any recapitalization, stock dividend, stock split, combination of shares or other change in the Common Stock, the number of shares of Common Stock then subject to the Plan, including shares subject to restrictions, options or achievements of performance shares, shall be adjusted in proportion to the change in outstanding shares of Common Stock. In the event of any such adjustments, the purchase price of any option, the performance objectives of any Incentive, and the shares of Common Stock issuable pursuant to any Incentive shall be adjusted as and to the extent appropriate, in the discretion of the Committee, to provide participants with the same relative rights before and after such adjustment.

10.7. Incentive Plans and Agreements . Except in the case of stock awards, the terms of each Incentive shall be stated in a plan or agreement approved by the Committee. The Committee may also determine to enter into agreements with holders of options to reclassify or convert certain outstanding options, within the terms of the Plan, as Incentive Stock Options or as non-statutory stock options and in order to eliminate SARs with respect to all or part of such options and any other previously issued options.

10.8. Withholding .

(a) The Company shall have the right to withhold from any payments made under the Plan or to collect as a condition of payment, any taxes required by law to be withheld. At any time when a participant is required to pay to the Company an amount required to be withheld under applicable income tax laws in connection with a distribution of Common Stock or upon exercise of an option or SAR or upon the lapse of restrictions on restricted stock, the participant may satisfy this obligation in whole or in part by electing (the “Election”) to have the Company withhold from the distribution, or from such shares of restricted stock, shares of Common Stock having a value up to the minimum amount of withholding taxes required to be collected on the transaction. The value of the shares to be withheld shall be based on the Fair Market Value of the Common Stock on the date that the amount of tax to be withheld shall be determined (“Tax Date”).

(b) Each Election must be made prior to the Tax Date. The Committee may disapprove of any Election, may suspend or terminate the right to make Elections, or may provide with respect to any Incentive that the right to make Elections shall not apply to such Incentive. An Election is irrevocable.

10.9. No Continued Employment, Engagement or Right to Corporate Assets . No participant under the Plan shall have any right, because of his or her participation, to continue in the employ of the Company for any period of time or to any right to continue his or her present or any other rate of compensation. Nothing contained in the Plan shall be construed as giving an employee, a consultant, such persons' beneficiaries or any other person any equity or interests of any kind in the assets of the Company or creating a trust of any kind or a fiduciary relationship of any kind between the Company and any such person.

10.10. Deferral Permitted . Payment of cash or distribution of any shares of Common Stock to which a participant is entitled under any Incentive shall be made as provided in the Incentive. Payment may be deferred at the option of the participant if provided in the Incentive.

10.11. Amendment of the Plan . The Board of Directors may amend or discontinue the Plan at any time. However, no such amendment or discontinuance shall adversely change or impair, without the consent of the recipient, an Incentive previously granted. Further, no such amendment shall, without approval of the shareholders of the Company, (a) increase the maximum number of shares of Common Stock which may be issued to all participants under the Plan, (b) change the class of persons eligible to receive Incentives under the Plan, or (c) materially increase the benefits accruing to participants under the Plan.

10.12 Sale, Merger, Exchange or Liquidation . Unless otherwise provided in the agreement for an Incentive, in the event of an acquisition of the Company through the sale of substantially all of the Company's assets or through a merger, exchange, reorganization or liquidation of the Company or a similar event as determined by the Committee (collectively a "transaction"), the Committee shall be authorized, in its sole discretion, to take any and all action it deems equitable under the circumstances, including but not limited to any one or more of the following:

(1) providing that the Plan and all Incentives shall terminate and the holders of (i) all outstanding vested options shall receive, in lieu of any shares of Common Stock they would be entitled to receive under such options, such stock, securities or assets, including cash, as would have been paid to such participants if their options had been exercised and such participant had received Common Stock immediately prior to such transaction (with appropriate adjustment for the exercise price, if any), (ii) performance shares and/or SARs that entitle the participant to receive Common Stock shall receive, in lieu of any shares of Common Stock each participant was entitled to receive as of the date of the transaction pursuant to the terms of such Incentive, if any, such stock, securities or assets, including cash, as would have been paid to such participant if such Common Stock had been issued to and held by the participant immediately prior to such transaction, and (iii) any Incentive under this Agreement which does not entitle the participant to receive Common Stock shall be equitably treated as determined by the Committee.

(2) providing that participants holding outstanding vested Common Stock based Incentives shall receive, with respect to each share of Common Stock issuable pursuant to such Incentives as of the effective date of any such transaction, at the determination of the Committee, cash, securities or other property, or any combination thereof, in an amount equal to the excess, if any, of the Fair Market Value of such Common Stock on a date within ten days prior to the effective date of such transaction over the option price or other amount owed by a participant, if any, and that such Incentives shall be cancelled, including the cancellation without consideration of all options that have an exercise price below the per share value of the consideration received by the Company in the transaction.

(3) providing that the Plan (or replacement plan) shall continue with respect to Incentives not cancelled or terminated as of the effective date of such transaction and provide to participants holding such Incentives the right to earn their respective Incentives on a substantially equivalent basis (taking into account the transaction and the number of shares or other equity issued by such successor entity) with respect to the equity of the entity succeeding the Company by reason of such transaction.

(4) providing that all unvested, unearned or restricted Incentives, including but not limited to restricted stock for which restrictions have not lapsed as of the effective date of such transaction, shall be void and deemed terminated, or, in the alternative, for the acceleration or waiver of any vesting, earning or restrictions on any Incentive.

The Board of Directors may restrict the rights of participants or the applicability of this Section 10.12 to the extent necessary to comply with Section 16(b) of the 1934 Act, the Code or any other applicable law or regulation. The grant of an Incentive award pursuant to the Plan shall not limit in any way the right or power of the Company to make adjustments, reclassifications, reorganizations or changes of its capital or business structure or to merge, exchange or consolidate or to dissolve, liquidate, sell or transfer all or any part of its business or assets.

10.13. Definition of Fair Market Value . For purposes of this Plan, the "Fair Market Value" of a share of Common Stock at a specified date shall, unless otherwise expressly provided in this Plan, be the amount which the Committee or the Board of Directors determines in good faith to be 100% of the fair market value of such a share as of the date in question. Notwithstanding the foregoing, if such shares are listed on a U.S. securities exchange, then Fair Market Value shall be determined by reference to the last sale price of a share of Common Stock on such U.S. securities exchange on the applicable date. If such U.S. securities exchange is closed for trading on such date, or if the Common Stock does not trade on such date, then the last sale price used shall be the one on the date the Common Stock last traded on such U.S. securities exchange.

10.14 Prohibition on Repricing . Except in connection with a corporate transaction involving the Company (including, without limitation, any stock dividend, stock split, extraordinary cash dividend, recapitalization, reorganization, merger, consolidation, split-up, spin-off, combination, or exchange of shares), the terms of outstanding Incentives may not be amended to reduce the exercise price of outstanding Options or SARs or cancel outstanding Options or SARS in exchange for cash, other awards or Options or SARs with an exercise price that is less than the exercise price of the original Options or SARs without stockholder approval.

10.15 Exceptions to Minimum Time Periods . The minimum period over which restrictions applicable to restricted stock shall lapse, and the minimum period over which performance objectives applicable to performance shares are measured, as set forth in Sections 8.3 and 9.1, respectively, shall not apply to (a) restricted stock awards that are granted to directors of the Company as compensation for their service on the Company's Board of Directors; or (b) Incentives granted after September 1, 2010 (the date on which this Amended and Restated Stock Option Plan was adopted) that represent up to 10% of the total number of shares reserved for issuance hereunder. The Committee may, in its discretion, elect or agree to accelerate the period over which restrictions applicable to restricted stock lapse, or the period over which performance objectives applicable to performance shares are measured, in connection with either a change of control of the Company, a "transaction" (as defined in Section 10.12) or the death, disability or retirement of a Plan participant.

10.16 Code Section 409A Provisions . To the extent applicable, this Plan and Incentives granted hereunder shall be interpreted in accordance with Code Section 409A (including the Department of Treasury regulations and other interpretive guidance issued thereunder). Any payment or distribution under the Plan that constitutes "deferred compensation" to a participant under Code Section 409A and that otherwise would be made to a participant who is a Specified Employee (as determined under Code Section 409A by the Committee in good faith) on account of separation from service (as defined under Code Section 409A) may be deferred until the date that is six (6) months after the date of the Specified Employee's separation from service (or death, if earlier). Notwithstanding the foregoing, the Company makes no guarantees to the recipients of Incentives regarding the tax treatment of Incentives or payments made under the Plan, and, notwithstanding any agreement or understanding to the contrary, if any Incentives, payments or other amounts due to a recipient (or his or her beneficiaries or permits assigns, as applicable) results in, or causes in any manner, the application of an accelerated or additional tax, fine or penalty under Code Section 409A or otherwise to be imposed, then the recipient (or his or her beneficiaries or permitted assigns, as applicable) shall be solely liable for the payment of, and the Company shall have no obligation or liability to pay or reimburse (either directly or otherwise) the recipient (or his or her beneficiaries or permitted assigns, as applicable) for, any such additional taxes, fines or penalties.

August 7, 2009

STRICTLY CONFIDENTIAL

Dr. Jonathan Lewis, M.D., Ph.D.
Chief Executive Officer
ZIOPHARM Oncology
1180 Avenue of the Americas, 19th Floor
New York, NY 10036

Dear Dr. Lewis:

This letter (the "Agreement") constitutes the agreement between ZIOPHARM Oncology, Inc. (the "Company") and Rodman & Renshaw, LLC ("Rodman") that Rodman shall serve as the exclusive placement agent (the "Services") for the Company, on a "reasonable best efforts" basis, in connection with the proposed offer and placement (the "Offering") by the Company of securities of the Company (the "Securities"). The terms of the Offering and the Securities shall be mutually agreed upon by the Company and the investors and nothing herein implies that Rodman would have the power or authority to bind the Company or an obligation for the Company to issue any Securities or complete the Offering. The Company expressly acknowledges and agrees that Rodman's obligations hereunder are on a reasonable best efforts basis only and that the execution of this Agreement does not constitute a commitment by Rodman to purchase the Securities and does not ensure the successful placement of the Securities or any portion thereof or the success of Rodman with respect to securing any other financing on behalf of the Company.

A. Fees and Expenses . In connection with the Services described above, the Company shall pay to Rodman the following compensation:

1. Placement Agent's Fee . The Company shall pay to Rodman a cash placement fee (the "Placement Agent's Fee") equal to 7% of the aggregate purchase price paid by each purchaser of Securities that are placed in the Offering. The Placement Agent's Fee shall be paid at the closing of the Offering (the "Closing") from the gross proceeds of the Securities sold.

2. Warrants . As additional compensation for the Services, the Company shall issue to Rodman or its designees at the Closing, warrants (the "Rodman Warrants") to purchase that number of shares of common stock of the Company ("Shares") equal to 5% of the aggregate number of capital shares of the Company placed in the Offering, excluding any such shares underlying any warrants placed in the Offering. The Rodman Warrants shall have the same terms, including exercise price and registration rights, as the warrants issued to investors ("Investors") in the Offering. If no warrants are issued to Investors, the Rodman Warrants shall have an exercise price equal to 110% of the price at which equity Securities are issued to Investors or, if no equity Securities are issued, 110% of the current market price of the Shares at Closing, an exercise period of five years and registration rights for the Shares underlying the Rodman Warrants equivalent to those granted with respect to the Securities.

3. Expenses . In addition to any fees payable to Rodman hereunder, but only if an Offering is consummated, the Company hereby agrees to reimburse Rodman for all reasonable travel and other out-of-pocket expenses incurred in connection with Rodman's engagement, including the reasonable fees and expenses of Rodman's counsel. Such reimbursement shall be limited to $50,000 without prior written approval by the Company and shall be paid at the Closing from the gross proceeds of the Securities sold.

B. Term and Termination of Engagement . The term (the "Term") of Rodman's engagement will begin on the date hereof and end on the earlier of the consummation of the Offering or the receipt by either party hereto of written notice of termination; provided that no such notice may be given by the Company for a period of 30 days after the date hereof. Notwithstanding anything to the contrary contained herein, the provisions concerning confidentiality, indemnification, contribution and the Company's obligations to pay fees and reimburse expenses contained herein will survive any expiration or termination of this Agreement.

C. Fee Tail . Rodman shall be entitled to a Placement Agent's Fee and Rodman Warrants, calculated in the manner provided in Paragraph A, with respect to any public or private offering or other financing or capital-raising transaction of any kind ("Tail Financing") to the extent that such financing or capital is provided to the Company by investors whom Rodman had introduced, directly or indirectly, to the Company during the Term, if such Tail Financing is consummated at any time within the 12-month period following the expiration or termination of this Agreement (the "Tail Period"). For the avoidance of doubt, neither Merlin Nexus or Index Ventures (or their respective affiliates), nor any beneficial holder of 10% or more of the Company's common stock as of the date hereof shall be considered an introduced investor. The Company and Rodman shall mutually agree upon a list of introduced investors to be set forth on a Schedule 1 to be attached to this Agreement at the time of termination or expiration hereof.

D. Use of Information . The Company will furnish Rodman such written information as Rodman reasonably requests in connection with the performance of its services hereunder. The Company understands, acknowledges and agrees that, in performing its services hereunder, Rodman will use and rely entirely upon such information as well as publicly available information regarding the Company and other potential parties to an Offering and that Rodman does not assume responsibility for independent verification of the accuracy or completeness of any information, whether publicly available or otherwise furnished to it, concerning the Company or otherwise relevant to an Offering, including, without limitation, any financial information, forecasts or projections considered by Rodman in connection with the provision of its services.

E. Confidentiality . In the event of the consummation or public announcement of any Offering, Rodman shall have the right to disclose its participation in such Offering, including, without limitation, the placement at its cost of "tombstone" advertisements in financial and other newspapers and journals. Rodman agrees not to use any confidential information concerning the Company provided to Rodman by the Company for any purposes other than those contemplated under this Agreement.

F. Securities Matters . The Company shall be responsible for any and all compliance with the securities laws applicable to it, including Regulation D and the Securities Act of 1933, as amended (the "Securities Act"), and Rule 506 promulgated thereunder, and unless otherwise agreed in writing, all state securities ("blue sky") laws. Rodman agrees to cooperate with counsel to the Company in that regard.

G. Indemnity .

1. In connection with the Company's engagement of Rodman as placement agent, the Company hereby agrees to indemnify and hold harmless Rodman and its affiliates, and the respective controlling persons, directors, officers, shareholders, agents and employees of any of the foregoing (collectively the "Indemnified Persons"), from and against any and all claims, actions, suits, proceedings (including those of shareholders), damages, liabilities and expenses incurred by any of them (including the reasonable fees and expenses of counsel), as incurred, (collectively a "Claim"), that are (A) related to or arise out of (i) any actions taken or omitted to be taken (including any untrue statements made or any statements omitted to be made) by the Company, or (ii) any actions taken or omitted to be taken by any Indemnified Person in connection with the Company's engagement of Rodman, or (B) otherwise relate to or arise out of Rodman's activities on the Company's behalf under Rodman's engagement, and the Company shall reimburse any Indemnified Person for all expenses (including the reasonable fees and expenses of counsel) as incurred by such Indemnified Person in connection with investigating, preparing or defending any such claim, action, suit or proceeding, whether or not in connection with pending or threatened litigation in which any Indemnified Person is a party. The Company will not, however, be responsible for any Claim that is finally judicially determined to have resulted from the gross negligence or willful misconduct of any person seeking indemnification for such Claim. The Company further agrees that no Indemnified Person shall have any liability to the Company for or in connection with the Company's engagement of Rodman except for any Claim incurred by the Company as a result of such Indemnified Person's gross negligence or willful misconduct.

2. The Company further agrees that it will not, without the prior written consent of Rodman, settle, compromise or consent to the entry of any judgment in any pending or threatened Claim in respect of which indemnification may be sought hereunder (whether or not any Indemnified Person is an actual or potential party to such Claim), unless such settlement, compromise or consent includes an unconditional, irrevocable release of each Indemnified Person from any and all liability arising out of such Claim.

3. Promptly upon receipt by an Indemnified Person of notice of any complaint or the assertion or institution of any Claim with respect to which indemnification is being sought hereunder, such Indemnified Person shall notify the Company in writing of such complaint or of such assertion or institution but failure to so notify the Company shall not relieve the Company from any obligation it may have hereunder, except and only to the extent such failure results in the forfeiture by the Company of substantial rights and defenses. If the Company so elects or is requested by such Indemnified Person, the Company will assume the defense of such Claim, including the employment of counsel reasonably satisfactory to such Indemnified Person and the payment of the fees and expenses of such counsel. In the event, however, that legal counsel to such Indemnified Person reasonably determines that having common counsel would present such counsel with a conflict of interest or if the defendant in, or target of, any such Claim, includes an Indemnified Person and the Company, and legal counsel to such Indemnified Person reasonably concludes that there may be legal defenses available to it or other Indemnified Persons different from or in addition to those available to the Company, then such Indemnified Person may employ its own separate counsel to represent or defend him, her or it in any such Claim and the Company shall pay the reasonable fees and expenses of such counsel. Notwithstanding anything herein to the contrary, if the Company fails timely or diligently to defend, contest, or otherwise protect against any Claim, the relevant Indemnified Party shall have the right, but not the obligation, to defend, contest, compromise, settle, assert crossclaims, or counterclaims or otherwise protect against the same, and shall be fully indemnified by the Company therefor, including without limitation, for the reasonable fees and expenses of its counsel and all amounts paid as a result of such Claim or the compromise or settlement thereof. In addition, with respect to any Claim in which the Company assumes the defense, the Indemnified Person shall have the right to participate in such Claim and to retain his, her or its own counsel therefor at his, her or its own expense.

4. The Company agrees that if any indemnity sought by an Indemnified Person hereunder is held by a court to be unavailable for any reason then (whether or not Rodman is the Indemnified Person), the Company and Rodman shall contribute to the Claim for which such indemnity is held unavailable in such proportion as is appropriate to reflect the relative benefits to the Company, on the one hand, and Rodman on the other, in connection with Rodman's engagement referred to above, subject to the limitation that in no event shall the amount of Rodman's contribution to such Claim exceed the amount of fees actually received by Rodman from the Company pursuant to Rodman's engagement. The Company hereby agrees that the relative benefits to the Company, on the one hand, and Rodman on the other, with respect to Rodman's engagement shall be deemed to be in the same proportion as (a) the total value paid or proposed to be paid or received by the Company or its stockholders as the case may be, pursuant to the Offering (whether or not consummated) for which Rodman is engaged to render services bears to (b) the fee paid or proposed to be paid to Rodman in connection with such engagement.

5. The Company's indemnity, reimbursement and contribution obligations under this Agreement (a) shall be in addition to, and shall in no way limit or otherwise adversely affect any rights that any Indemnified Party may have at law or at equity and (b) shall be effective whether or not the Company is at fault in any way.

H. Limitation of Engagement to the Company . The Company acknowledges that Rodman has been retained only by the Company, that Rodman is providing services hereunder as an independent contractor (and not in any fiduciary or agency capacity) and that the Company's engagement of Rodman is not deemed to be on behalf of, and is not intended to confer rights upon, any shareholder, owner or partner of the Company or any other person not a party hereto as against Rodman or any of its affiliates, or any of its or their respective officers, directors, controlling persons (within the meaning of Section 15 of the Securities Act or Section 20 of the Securities Exchange Act of 1934, as amended (the "Exchange Act")), employees or agents. Unless otherwise expressly agreed in writing by Rodman, no one other than the Company is authorized to rely upon this Agreement or any other statements or conduct of Rodman, and no one other than the Company is intended to be a beneficiary of this Agreement. The Company acknowledges that any recommendation or advice, written or oral, given by Rodman to the Company in connection with Rodman's engagement is intended solely for the benefit and use of the Company's management and directors in considering a possible Offering, and any such recommendation or advice is not on behalf of, and shall not confer any rights or remedies upon, any other person or be used or relied upon for any other purpose. Rodman shall not have the authority to make any commitment binding on the Company. The Company, in its sole discretion, shall have the right to reject any investor introduced to it by Rodman. The Company agrees that it will perform and comply with the covenants and other obligations set forth in the purchase agreement and related transaction documents between the Company and the investors in the Offering, and that Rodman will be entitled to rely on the representations, warranties, agreements and covenants of the Company contained in such purchase agreement and related transaction documents as if such representations, warranties, agreements and covenants were made directly to Rodman by the Company.

I. Limitation of Rodman's Liability to the Company . Rodman and the Company further agree that neither Rodman nor any of its affiliates or any of its or their respective officers, directors, controlling persons (within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act), employees or agents shall have any liability to the Company, its security holders or creditors, or any person asserting claims on behalf of or in the right of the Company (whether direct or indirect, in contract, tort, for an act of negligence or otherwise) for any losses, fees, damages, liabilities, costs, expenses or equitable relief arising out of or relating to this Agreement or the Services rendered hereunder, except for losses, fees, damages, liabilities, costs or expenses that arise out of or are based on any action of or failure to act by Rodman and that are finally judicially determined to have resulted solely from the gross negligence or willful misconduct of Rodman.

J. Governing Law . This Agreement shall be governed by and construed in accordance with the laws of the State of New York applicable to agreements made and to be fully performed therein. Any disputes that arise under this Agreement, even after the termination of this Agreement, will be heard only in the state or federal courts located in the City of New York, State of New York. The parties hereto expressly agree to submit themselves to the jurisdiction of the foregoing courts in the City of New York, State of New York. The parties hereto expressly waive any rights they may have to contest the jurisdiction, venue or authority of any court sitting in the City and State of New York. In the event of the bringing of any action, or suit by a party hereto against the other party hereto, arising out of or relating to this Agreement, the party in whose favor the final judgment or award shall be entered shall be entitled to have and recover from the other party the costs and expenses incurred in connection therewith, including its reasonable attorneys' fees. Any rights to trial by jury with respect to any such action, proceeding or suit are hereby waived by Rodman and the Company.

K. Notices . All notices hereunder will be in writing and sent by certified mail, hand delivery, overnight delivery or fax, if sent to Rodman, to the address set forth on the first page hereof, fax number (646) 841-1640, Attention: General Counsel, and if sent to the Company, to the address on the first page hereof, fax number (646) 214-0711, Attention: Chief Executive Officer. Notices sent by certified mail shall be deemed received five days thereafter, notices sent by hand delivery or overnight delivery shall be deemed received on the date of the relevant written record of receipt, and notices delivered by fax shall be deemed received as of the date and time printed thereon by the fax machine.

L. Miscellaneous . The Company represents that it is free to enter into this Agreement and the transactions contemplated hereby, that it will act in good faith, and that it will not hinder Rodman's efforts hereunder. This Agreement shall not be modified or amended except in writing signed by Rodman and the Company. This Agreement shall be binding upon and inure to the benefit of Rodman and the Company and their respective assigns, successors, and legal representatives. This Agreement constitutes the entire agreement of Rodman and the Company, and supersedes any prior agreements, with respect to the subject matter hereof. If any provision of this Agreement is determined to be invalid or unenforceable in any respect, such determination will not affect such provision in any other respect, and the remainder of the Agreement shall remain in full force and effect. This Agreement may be executed in counterparts (including facsimile or .pdf counterparts), each of which shall be deemed an original but all of which together shall constitute one and the same instrument.

In acknowledgment that the foregoing correctly sets forth the understanding reached by Rodman and the Company, please sign in the space provided below, whereupon this letter shall constitute a binding Agreement as of the date indicated above.

Very truly yours,

RODMAN & RENSHAW, LLC

By /s/ John Borer
Name: John Borer
Title: Sr. Managing Director

Accepted and Agreed:

ZIOPHARM ONCOLOGY, INC.

By /s/ Jonathan Lewis
Name: Jonathan Lewis, MD, PhD
Title: Chief Executive Officer

REGISTRATION RIGHTS AGREEMENT

This Registration Rights Agreement (this " **Agreement** ") is made and entered into as of January 12, 2011, by and among ZIOPHARM Oncology, Inc., a Delaware corporation (the " **Company** "), and Intrexon Corporation, a Virginia corporation (" **Intrexon** ").

This Agreement is being entered into pursuant to the Stock Purchase Agreement between the Company and Intrexon dated as of January 6, 2011 (the " **Purchase Agreement** ").

The Company and Intrexon hereby agree as follows:

1. Definitions.

Capitalized terms used and not otherwise defined herein shall have the meanings given such terms in the Purchase Agreement. As used in this Agreement, the following terms shall have the following meanings:

" **Affiliate** " means, with respect to any Person, any other Person that directly or indirectly controls or is controlled by or under common control with such Person. For the purposes of this definition, " **control** ," when used with respect to any Person, means the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of such Person, whether through the ownership of voting securities, by contract or otherwise; and the terms of " **affiliated** ," " **controlling** " and " **controlled** " have meanings correlative to the foregoing.

" **Board** " means the Company's Board of Directors.

" **Business Day** " means any day except Saturday, Sunday and any day which shall be a legal holiday or a day on which banking institutions in the state of Delaware generally are authorized or required by law or other government actions to close.

" **Closing Date** " means the date of the closing of the purchase and sale of the Shares pursuant to the Purchase Agreement.

" **Commission** " means the Securities and Exchange Commission.

" **Common Stock** " means the Company's Common Stock, par value $0.001 per share.

" **Effectiveness Period** " shall have the meaning set forth in Section 2.

" **Exchange Act** " means the Securities Exchange Act of 1934, as amended.

" **Filing Date** " means May 11, 2011.

" **Holder** " or " **Holders** " means the holder or holders, as the case may be, from time to time of Registrable Securities.

" **Indemnified Party** " shall have the meaning set forth in Section 5(c).

" **Indemnifying Party** " shall have the meaning set forth in Section 5(c).

" **Losses** " shall have the meaning set forth in Section 5(a).

" **Person** " means an individual or a corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability company, joint stock company, government (or an agency or political subdivision thereof) or other entity of any kind.

" **Proceeding** " means an action, claim, suit, investigation or proceeding (including, without limitation, an investigation or partial proceeding, such as a deposition), whether commenced or threatened.

" **Prospectus** " means the prospectus included in the Registration Statement (including, without limitation, a prospectus that includes any information previously omitted from a prospectus filed as part of an effective registration statement in reliance upon Rule 430A promulgated under the Securities Act), as amended or supplemented by any prospectus supplement, with respect to the terms of the offering of any portion of the Registrable Securities covered by the Registration Statement, and all other amendments and supplements to the Prospectus, including post-effective amendments, and all material incorporated by reference in such Prospectus.

" **Registrable Securities** " means the First Tranche Shares, Second Tranche Shares and Upfront Purchase Shares (as such terms are defined in the Purchase Agreement) issued or issuable to Intrexon and any securities issued with respect to, or in exchange for or in replacement of such shares of Common Stock upon any stock split, stock dividend, recapitalization, subdivision, merger or similar event; provided, however, that the applicable Holder has completed and delivered to the Company a Selling Stockholder Questionnaire; and provided further that such securities shall no longer be deemed Registrable Securities if such securities have been sold pursuant to a Registration Statement, or (ii) such shares have been sold in compliance with Rule 144 or all such shares may be sold without limitation pursuant to Rule 144.

" **Registration Statement** " means the registration statements and any additional registration statements contemplated by Section 2, including (in each case) the Prospectus, amendments and supplements to such registration statement or Prospectus, including pre- and post-effective amendments, all exhibits thereto, and all material incorporated by reference in such registration statement.

" **Rule 144** " means Rule 144 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same effect as such Rule.

" **Rule 415** " means Rule 415 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same effect as such Rule.

" **Securities Act** " means the Securities Act of 1933, as amended.

" **Selling Stockholder Questionnaire** " means a questionnaire in the form attached as Annex B hereto, or such other form of questionnaire as may reasonably be requested by the Company from time to time.

2. Registration Obligations; Filing Date Registration . On or prior to the Filing Date the Company shall prepare and file with the Commission a Registration Statement covering the resale of the Registrable Securities as would permit or facilitate the sale and distribution of all the Registrable Securities in the manner reasonably requested by the Holder; provided, however, that if the Filing Date falls on a day that is not a Business Day, such deadline shall be extended to the next Business Day. The Registration Statement shall be on Form S-3 (except if the Company is not then eligible to register for resale the Registrable Securities on Form S-3, in which case such registration shall be on another appropriate form in accordance with the Securities Act and the rules promulgated thereunder and the Company shall undertake to register the Registrable Securities on Form S-3 as soon as practicable following the availability of such form, provided that the Company shall use reasonable best efforts to maintain the effectiveness of the Registration Statement then in effect until such time as a Registration Statement on Form S-3 covering the Registrable Securities has been declared effective by the Commission). The Registration Statement shall contain the "Plan of Distribution" section in substantially the form attached hereto as Annex A. The Company shall use reasonable best efforts to cause the Registration Statement to be declared effective under the Securities Act as promptly as practicable after the filing thereof, and, subject to Section 3(j) hereof, to keep such Registration Statement continuously effective under the Securities Act until such date as is the earlier of (x) the date when all Registrable Securities covered by such Registration Statement have been sold under such Registration Statement; or (y) the date on which the Registrable Securities may be sold pursuant to Rule 144, without limitations, as determined by the counsel to the Company pursuant to a written opinion letter, addressed to the Company's transfer agent to such effect (the " **Effectiveness Period** "). By 9:30 am Eastern Time on the Business Day following the Effective Date, the Company shall file with the Commission in accordance with Rule 424 under the Securities Act the final prospectus to be used in connection with sales pursuant to such Registration Statement. Intrexon acknowledges and agrees that securities other than the Registrable Securities may be included in the Registration Statement.

3. Registration Procedures.

In connection with the Company's registration obligations hereunder, the Company shall:

(a) Prepare and file with the Commission on or prior to the Filing Date, a Registration Statement on Form S-3 (or if the Company is not then eligible to register for resale the Registrable Securities on Form S-3 such registration shall be on another appropriate form in accordance with the Securities Act and the rules and regulations promulgated thereunder) in accordance with the method or methods of distribution thereof as described on Annex A hereto (except if otherwise directed by all of the Holders), and use reasonable best efforts to cause the Registration Statement to become effective and remain effective as provided herein.

(b) Prepare and file with the Commission such amendments, including post-effective amendments, to the Registration Statement as may be necessary to keep the Registration Statement continuously effective (subject to Section 3(l)) as to the applicable Registrable Securities for the Effectiveness Period and prepare and file with the Commission such additional Registration Statements, if necessary, in order to register for resale under the Securities Act all of the Registrable Securities; (ii) cause the related Prospectus to be amended or supplemented by any required Prospectus supplement, and as so supplemented or amended to be filed pursuant to Rule 424 (or any similar provisions then in force) promulgated under the Securities Act; (iii) respond promptly to any comments received from the Commission with respect to the Registration Statement or any amendment thereto and promptly provide the Holders true and complete copies of all correspondence from and to the Commission relating to the Registration Statement; and (iv) comply in all material respects with the provisions of the Securities Act and the Exchange Act with respect to the disposition of all Registrable Securities covered by the Registration Statement during the applicable period in accordance with the intended methods of disposition by the Holders thereof set forth in the Registration Statement as so amended or in such Prospectus as so supplemented.

(c) Promptly notify the Holders of Registrable Securities (i)(A) when a Prospectus or any Prospectus supplement or post-effective amendment to the Registration Statement is filed; (B) when the Commission notifies the Company whether there will be a "review" of such Registration Statement and whenever the Commission comments in writing on such Registration Statement, and if requested by such Holders, furnish to them a copy of such comments and the Company's responses thereto; and (C) with respect to the Registration Statement or any post-effective amendment, when the same has become effective; (ii) of any request by the Commission or any other Federal or state governmental authority for amendments or supplements to the Registration Statement or Prospectus or for additional information; (iii) of the issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement covering any or all of the Registrable Securities or the initiation of any Proceedings for that purpose; (iv) of the receipt by the Company of any notification with respect to the suspension of the qualification or exemption from qualification of any of the Registrable Securities for sale in any jurisdiction, or the initiation or threatening of any Proceeding for such purpose; and (v) of the occurrence of any event that makes any statement made in the Registration Statement or Prospectus or any document incorporated or deemed to be incorporated therein by reference untrue in any material respect or that requires any revisions to the Registration Statement, Prospectus or other documents so that, in the case of the Registration Statement or the Prospectus, as the case may be, it will not contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(d) Use reasonable best efforts to avoid the issuance of, or, if issued, obtain the withdrawal of, (i) any order suspending the effectiveness of the Registration Statement or (ii) any suspension of the qualification (or exemption from qualification) of any of the Registrable Securities for sale in any U.S. jurisdiction.

(e) If requested by the Holders of a majority of the Registrable Securities, (i) promptly incorporate in a Prospectus supplement or post-effective amendment to the Registration Statement such information as the Company reasonably agrees should be included therein and (ii) make all required filings of such Prospectus supplement or such post-effective amendment as soon as practicable after the Company has received notification of the matters to be incorporated in such Prospectus supplement or post-effective amendment.

(f) Furnish to each Holder, without charge and upon request, at least one conformed copy of each Registration Statement and each amendment thereto, including financial statements and schedules, and, to the extent requested by such Person, all documents incorporated or deemed to be incorporated therein by reference, and all exhibits (including those previously furnished or incorporated by reference) promptly after the filing of such documents with the Commission.

(g) Promptly deliver to each Holder, without charge, as many copies of the Prospectus or Prospectuses (including each form of prospectus) and each amendment or supplement thereto as such Persons may reasonably request; and the Company hereby consents to the use of such Prospectus and each amendment or supplement thereto by each of the selling Holders in connection with the offering and sale of the Registrable Securities covered by such Prospectus and any amendment or supplement thereto.

(h) Prior to any public offering of Registrable Securities, use commercially reasonable efforts to register or qualify or cooperate with the selling Holders in connection with the registration or qualification (or exemption from such registration or qualification) of such Registrable Securities for offer and sale under the securities or Blue Sky laws of such jurisdictions within the United States as any Holder reasonably requests in writing, to keep each such registration or qualification (or exemption therefrom) effective during the Effectiveness Period and to do any and all other acts or things necessary or advisable to enable the disposition in such jurisdictions of the Registrable Securities covered by a Registration Statement; provided , however , the Company shall in no event be required to (x) qualify to do business in any state where it is not then qualified or (y) take any action that would subject it to tax or to the general service of process in any such state where it is not then subject, or (z) comply with state securities or "blue sky" laws of any state for which registration by coordination is unavailable to the Company.

(i) Cooperate with the Holders to facilitate the timely preparation and delivery of certificates representing Registrable Securities to be sold pursuant to a Registration Statement.

(j) Upon the occurrence of any event contemplated by Section 3(c)(v), promptly prepare a supplement or amendment, including a post-effective amendment, to the Registration Statement or a supplement to the related Prospectus or any document incorporated or deemed to be incorporated therein by reference, and file any other required document so that, as thereafter delivered, neither the Registration Statement nor such Prospectus will contain an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(k) Use commercially reasonable efforts to cause all Registrable Securities relating to the Registration Statement to be listed on the Nasdaq Stock Market or any subsequent securities exchange, quotation system or market, if any, on which similar securities issued by the Company are then listed or traded.

(l) The Company may require each selling Holder to furnish to the Company information regarding such Holder and the distribution of such Registrable Securities as is required by law to be disclosed in the Registration Statement, and the Company may exclude from such registration the Registrable Securities of any such Holder who fails to furnish such information within fifteen (15) days after receiving such request.

Each Holder covenants and agrees that (i) it will not sell any Registrable Securities under the Registration Statement until it has received copies of the Prospectus as then amended or supplemented as contemplated in Section 3(g) and notice from the Company that such Registration Statement and any post-effective amendments thereto have become effective as contemplated by Section 3(c) and (ii) it and its officers, directors or Affiliates, if any, will comply with the prospectus delivery requirements of the Securities Act as applicable to them in connection with sales of Registrable Securities pursuant to the Registration Statement.

Each Holder agrees by its acquisition of such Registrable Securities that, upon receipt of a notice from the Company of the occurrence of any event of the kind described in Section 3(c)(ii), 3(c)(iii), 3(c)(iv), 3(c)(v) or 3(m), such Holder will forthwith discontinue disposition of such Registrable Securities under the Registration Statement until such Holder's receipt of the copies of the supplemented Prospectus and/or amended Registration Statement contemplated by Section 3(j), or until it is advised in writing by the Company that the use of the applicable Prospectus may be resumed, and, in either case, has received copies of any additional or supplemental filings that are incorporated or deemed to be incorporated by reference in such Prospectus or Registration Statement.

(m) If (i) there is material non-public information regarding the Company which the Board reasonably determines not to be in the Company's best interest to disclose and which the Company is not otherwise required to disclose, or (ii) there is a significant business opportunity (including, but not limited to, the acquisition or disposition of assets (other than in the ordinary course of business) or any merger, consolidation, tender offer or other similar transaction) available to the Company which the Board reasonably determines not to be in the Company's best interest to disclose, then the Company may postpone or suspend filing or effectiveness of a registration statement for a period not to exceed thirty (30) consecutive days, provided that the Company may not postpone or suspend its obligation under this Section 3(m) for more than sixty (60) days in the aggregate during any 12 month period; provided , however , that no such postponement or suspension shall be permitted for consecutive thirty (30) day periods, arising out of the same set of facts, circumstances or transactions.

(n) Any legend indicating, directly or indirectly, that the Registrable Securities constitute "restricted securities" (as such term is defined in Rule 144) stamped on a certificate evidencing the Registrable Securities, and the related stock transfer instructions and record notations with respect to such Registrable Securities, shall be removed and the Company shall approve the issuance of a certificate without such legend to the holder of such Securities if the Holder thereof provides the Company with reasonable assurances that such securities can be sold pursuant to Rule 144. Following the receipt by the Company of such assurances, the Company will, no later than five trading days following the delivery by a holder to the Company or the Company's transfer agent of a legended certificate representing such securities, deliver or cause to be delivered to such Holder a certificate representing such securities that is free from all restrictive and other legends.

4. Registration Expenses.

All reasonable fees and expenses incident to the performance of or compliance with this Agreement by the Company (excluding underwriters' discounts and commissions and all fees and expenses of legal counsel, accountants and other advisors for any Holder except as specifically provided below), except as and to the extent specified in this Section 4, shall be borne by the Company whether or not the Registration Statement is filed or becomes effective and whether or not any Registrable Securities are sold pursuant to the Registration Statement. The fees and expenses referred to in the foregoing sentence shall include, without limitation, (i) all registration and filing fees (including, without limitation, fees and expenses (A) with respect to filings required to be made with the Nasdaq Stock Market and each other securities exchange or market on which Registrable Securities are required hereunder to be listed, (B) with respect to filings required to be made with the Financial Industry Regulatory Authority and (C) in compliance with state securities or Blue Sky laws, (ii) messenger, telephone and delivery expenses, (iii) fees and disbursements of counsel for the Company, (iv) Securities Act liability insurance, if the Company so desires such insurance, and (v) fees and expenses of all other Persons retained by the Company in connection with the consummation of the transactions contemplated by this Agreement, including, without limitation, the Company's independent public accountants. In addition, the Company shall be responsible for all of its internal expenses incurred in connection with the consummation of the transactions contemplated by this Agreement (including, without limitation, all salaries and expenses of its officers and employees performing legal or accounting duties), the expense of any annual audit, the fees and expenses incurred in connection with the listing of the Registrable Securities on any securities exchange as required hereunder.

5. Indemnification.

(a) Indemnification by the Company . The Company shall, notwithstanding any termination of this Agreement, indemnify and hold harmless each Holder, its permitted assignees, officers, directors, agents, brokers (including brokers who offer and sell Registrable Securities as principal as a result of a pledge or any failure to perform under a margin call of Common Stock), underwriters, investment advisors and employees, each Person who controls any such Holder or permitted assignee (within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act) and the officers, directors, agents and employees of each such controlling Person, and the respective successors, assigns, estate and personal representatives of each of the foregoing, to the fullest extent permitted by applicable law, from and against any and all claims, losses, damages, liabilities, penalties, judgments, costs (including, without limitation, costs of investigation) and expenses (including, without limitation, reasonable attorneys' fees and expenses) (collectively, " **Losses** "), arising out of or relating to any untrue or alleged untrue statement of a material fact contained in the Registration Statement, any Prospectus, as supplemented or amended, if applicable, or arising out of or relating to any omission or alleged omission of a material fact required to be stated therein or necessary to make the statements therein (in the case of any Prospectus or form of prospectus or supplement thereto, in the light of the circumstances under which they were made) not misleading, except (i) to the extent, but only to the extent, that such untrue statements or omissions are based upon information regarding such Holder furnished in writing to the Company by such Holder expressly for use in the Registration Statement, such Prospectus or such form of Prospectus or in any amendment or supplement thereto (it being understood that each Holder has approved Annex A hereto for this purpose); (ii) as a result of the failure of such Holder to deliver a Prospectus, as amended or supplemented, to a purchaser in connection with an offer or sale; or (iii) in the case of an occurrence of an event of the type specified in Section 3(c)(ii)-(v), the use by a Holder of an outdated or defective Prospectus after the Company has notified such Holder in writing that the Prospectus is outdated or defective and prior to the receipt by such Holder of notice that use of the applicable prospectus may be resumed (and, if applicable, receipt of additional or supplemental filings that are incorporated or deemed to be incorporated by referenced in such Prospectus or Registration Statement), but only if and to the extent that following such receipt the misstatement or omission giving rise to such Loss would have been corrected; provided, however, that the indemnity agreement contained in this Section 5(a) shall not apply to amounts paid in settlement of any Losses if such settlement is effected without the prior written consent of the Company, which consent shall not be unreasonably withheld. The Company shall notify such Holder promptly of the institution, threat or assertion of any Proceeding of which the Company is aware in connection with the transactions contemplated by this Agreement. Such indemnity shall remain in full force and effect regardless of any investigation made by or on behalf of an Indemnified Party (as defined in Section 5(c) hereof) and shall survive the transfer of the Registrable Securities by the Holder.

(b) Indemnification by Holders . Each Holder and its permitted assignees shall, severally and not jointly, indemnify and hold harmless the Company, its directors, officers, agents and employees, each Person who controls the Company (within the meaning of Section 15 of the Securities Act and Section 20 of the Exchange Act), and the directors, officers, agents or employees of such controlling Persons, and the respective successors, assigns, estate and personal representatives of each of the foregoing, to the fullest extent permitted by applicable law, from and against all Losses, as incurred, arising out of or relating to any untrue or alleged untrue statement of a material fact contained in the Registration Statement, any Prospectus, as supplemented or amended, if applicable, or arising out of or relating to any omission or alleged omission of a material fact required to be stated therein or necessary to make the statements therein (in the case of any Prospectus or supplement thereto, in the light of the circumstances under which they were made) not misleading, to the extent, but only to the extent, that such untrue statement or omission is contained in or omitted from any information regarding such Holder furnished in writing to the Company by such Holder expressly for use therein, and that such information was reasonably relied upon by the Company for use therein, or to the extent that such information relates to such Holder or such Holder's proposed method of distribution of Registrable Securities and was furnished in writing by such Holder expressly for use therein (it being understood that each Holder has approved Annex A hereto for this purpose). Notwithstanding anything to the contrary contained herein, in no event shall the liability of any Person under this Section 5(b) exceed the net proceeds to such Person as a result of the sale of Registrable Securities pursuant to a Registration Statement in connection with which the untrue or alleged untrue statement or material omission was provided.

(c) Conduct of Indemnification Proceedings . If any Proceeding shall be brought or asserted against any Person entitled to indemnity hereunder (an " **Indemnified Party** "), such Indemnified Party promptly shall notify the Person from whom indemnity is sought (the " **Indemnifying Party** ") in writing, and the Indemnifying Party shall assume the defense thereof, including the employment of counsel reasonably satisfactory to the Indemnified Party and the payment of all fees and expenses incurred in connection with defense thereof; provided, that the failure of any Indemnified Party to give such notice shall not relieve the Indemnifying Party of its obligations or liabilities pursuant to this Agreement, except (and only) to the extent that it shall be finally determined by a court of competent jurisdiction (which determination is not subject to appeal or further review) that such failure shall have proximately and materially adversely prejudiced the Indemnifying Party.

An Indemnified Party shall have the right to employ separate counsel in any such Proceeding and to participate in the defense thereof, but the fees and expenses of such counsel shall be at the expense of such Indemnified Party or Parties unless: (1) the Indemnifying Party has agreed in writing to pay such fees and expenses; or (2) the Indemnifying Party shall have failed promptly to assume the defense of such Proceeding and to employ counsel reasonably satisfactory to such Indemnified Party in any such Proceeding; or (3) the named parties to any such Proceeding (including any impleaded parties) include both such Indemnified Party and the Indemnifying Party, and such Indemnified Party shall have been advised by counsel (which shall be reasonably acceptable to the Indemnifying Party) that a conflict of interest is likely to exist if the same counsel were to represent such Indemnified Party and the Indemnifying Party (in which case, the Indemnifying Party shall be responsible for reasonable fees and expenses of no more than one counsel for the Indemnified Parties). The Indemnifying Party shall not be liable for any settlement of any such Proceeding effected without its written consent, which consent shall not be unreasonably withheld or delayed. No Indemnifying Party shall, without the prior written consent of the Indemnified Party, effect any settlement of any pending Proceeding in respect of which any Indemnified Party is a party, unless such settlement includes an unconditional release of such Indemnified Party from all liability on claims that are the subject matter of such Proceeding.

All fees and expenses of the Indemnified Party (including reasonable fees and expenses to the extent incurred in connection with investigating or preparing to defend such Proceeding in a manner not inconsistent with this Section) shall be paid to the Indemnified Party, as incurred, within twenty (20) Business Days of written notice thereof to the Indemnifying Party (regardless of whether it is ultimately determined that an Indemnified Party is not entitled to indemnification hereunder; provided, that the Indemnifying Party may require such Indemnified Party to undertake to reimburse all such fees and expenses to the extent it is finally judicially determined that such Indemnified Party is not entitled to indemnification hereunder).

(d) Contribution . If a claim for indemnification under Section 5(a) or 5(b) is unavailable to an Indemnified Party because of a failure or refusal of a governmental authority to enforce such indemnification in accordance with its terms (by reason of public policy or otherwise), then each Indemnifying Party, in lieu of indemnifying such Indemnified Party, shall contribute to the amount paid or payable by such Indemnified Party as a result of such Losses, in such proportion as is appropriate to reflect the relative fault of the Indemnifying Party and Indemnified Party in connection with the actions, statements or omissions that resulted in such Losses as well as any other relevant equitable considerations. The relative fault of such Indemnifying Party and Indemnified Party shall be determined by reference to, among other things, whether any action in question, including any untrue or alleged untrue statement of a material fact or omission or alleged omission of a material fact, has been taken or made by, or relates to information supplied by, such Indemnifying, Party or Indemnified Party, and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such action, statement or omission. The amount paid or payable by a party as a result of any Losses shall be deemed to include, subject to the limitations set forth in Section 5(c), any reasonable attorneys' or other reasonable fees or expenses incurred by such party in connection with any Proceeding to the extent such party would have been indemnified for such fees or expenses if the indemnification provided for in this Section was available to such party in accordance with its terms.

The parties hereto agree that it would not be just and equitable if contribution pursuant to this Section 5(d) were determined by pro rata allocation or by any other method of allocation that does not take into account the equitable considerations referred to in the immediately preceding paragraph. No Person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any Person who was not guilty of such fraudulent misrepresentation.

The indemnity and contribution agreements contained in this Section are in addition to any liability that the Indemnifying Parties may have to the Indemnified Parties. Notwithstanding anything to the contrary contained herein, the Holders shall be liable under this Section 5(d) for only that amount as does not exceed the aggregate amount invested by such Holder under the Purchase Agreement.

6. Rule 144.

As long as any Holder owns any Registrable Securities, the Company covenants to use its commercially reasonable efforts to timely file (or obtain extensions in respect thereof and file within the applicable grace period) all reports required to be filed by the Company after the date hereof pursuant to Section 13(a) or 15(d) of the Exchange Act. As long as any Holder owns any Registrable Securities, if the Company is not required to file reports pursuant to Section 13(a) or 15(d) of the Exchange Act, it will prepare and furnish to the Holders and make publicly available in accordance with Rule 144 annual and quarterly financial statements, together with a discussion and analysis of such financial statements in form and substance substantially similar to those that would otherwise be required to be included in reports required by Section 13(a) or 15(d) of the Exchange Act, as well as any other information required thereby, in the time period that such filings would have been required to have been made under the Exchange Act. The Company further covenants that it will take such further action as any Holder may reasonably request, all to the extent required from time to time to enable such Person to sell the Shares without registration under the Securities Act within the limitation of the exemptions provided by Rule 144 promulgated under the Securities Act, including providing any legal opinions relating to such sale pursuant to Rule 144. Upon the request of any Holder, the Company shall deliver to such Holder a written certification of a duly authorized officer as to whether it has complied with such requirements.

7. Miscellaneous.

(a) Remedies . In the event of a breach by the Company or by a Holder, of any of their obligations under this Agreement, each Holder or the Company, as the case may be, in addition to being entitled to exercise all rights granted by law and under this Agreement, including recovery of damages, will be entitled to specific performance of its rights under this Agreement. The Company and each Holder agree that monetary damages would not provide adequate compensation for any losses incurred by reason of a breach by it of any of the provisions of this Agreement and hereby further agrees that, in the event of any action for specific performance in respect of such breach, it shall waive the defense that a remedy at law would be adequate.

(b) Entire Agreement; Amendment . This Agreement and the Purchase Agreement contain the entire understanding and agreement of the parties with respect to the matters covered hereby and, except as specifically set forth herein or in the Purchase Agreement, neither the Company nor any Holder make any representation, warranty, covenant or undertaking with respect to such matters, and they supersede all prior understandings and agreements with respect to said subject matter, all of which are merged herein. No provision of this Agreement may be waived or amended other than by a written instrument signed by the Company and the Holders of at least a majority of all Registrable Securities then outstanding. Any amendment or waiver effected in accordance with this Section 7(b) shall be binding upon each Holder (and their permitted assigns) and the Company.

(c) Notices . Any notice, demand, request, waiver or other communication required or permitted to be given hereunder shall be in writing and shall be deemed to have been given when delivered if personally delivered or sent by facsimile (provided that the party providing such notice promptly confirms receipt of such transmission with the other party by telephone), on the business day after dispatch if sent by a nationally-recognized overnight courier and on the third business day following the date of mailing if sent by certified mail, postage prepaid, return receipt requested. The addresses for such communications shall be:

If to the Company:
ZIOPHARM Oncology, Inc.
1180 Avenue of the Americas, 19 th Floor
New York, NY 10036
Attention: Chief Executive Officer
Fax No.: (646) 214-0711

with copies (which copies shall not constitute notice to the Company) to:
Maslon Edelman Borman & Brand, LLP
3300 Wells Fargo Center
90 South 7 th Street
Minneapolis, MN 55402
Attention: Alan M. Gilbert
Fax No.: (612) 642-8381

If to Intrexon: Intrexon Corporation
20358 Seneca Meadows Parkway
Germantown, MD 20876
Attention: Legal Department
Fax No.: (301) 556-9902

with copies (which copies shall not constitute notice to Intrexon) to: Cooley LLP
3175 Hanover Street
Palo Alto, CA 94304
Attention: Robert Jones
Fax No.: (650) 849-7400

Any party hereto may from time to time change its address for notices by giving written notice of such changed address to the other party hereto.

(d) Waivers . No waiver by either party of any default with respect to any provision, condition or requirement of this Agreement shall be deemed to be a continuing waiver in the future or a waiver of any other provision, condition or requirement hereof, nor shall any delay or omission of any party to exercise any right hereunder in any manner impair the exercise of any such right accruing to it thereafter.

(e) Successors and Assigns . This Agreement shall be binding upon and inure to the benefit of the parties and their successors and permitted assigns and shall inure to the benefit of each Holder and its successors and assigns. The Company may not assign this Agreement or any of its rights or obligations hereunder without the prior written consent of each Holder.

(f) Assignment of Registration Rights . The rights of each Holder hereunder, including the right to have the Company register for resale Registrable Securities in accordance with the terms of this Agreement, shall be assignable by each Holder of all or a portion of the Registrable Securities if: (i) the Holder agrees in writing with the transferee or assignee to assign such rights, and a copy of such agreement is furnished to the Company within a reasonable time after such assignment, (ii) the Company is, within a reasonable time after such transfer or assignment, furnished with written notice of (a) the name and address of such transferee or assignee, and (b) the securities with respect to which such registration rights are being transferred or assigned, (iii) following such transfer or assignment the further disposition of such securities by the transferee or assignees is restricted under the Securities Act and applicable state securities laws, and (iv) at or before the time the Company receives the written notice contemplated by clause (ii) of this Section, the transferee or assignee agrees in writing with the Company to be bound by all of the provisions of this Agreement. The rights to assignment shall apply to the Holders (and to subsequent) successors and assigns.

(g) Counterparts . This Agreement may be executed in any number of counterparts, each of which when so executed shall be deemed to be an original and, all of which taken together shall constitute one and the same Agreement. In the event that any signature is delivered by facsimile transmission, such signature shall create a valid binding obligation of the party executing (or on whose behalf such signature is executed) the same with the same force and effect as if such facsimile signature were the original thereof.

(h) Termination . This Agreement shall terminate on the earlier of (i) the date on which all remaining Registrable Securities may be sold without restriction pursuant to Rule 144 of the Securities Act or (ii) the date when all Registrable Securities have been sold pursuant to a Registration Statement.

(i) Governing Law . This Agreement shall be governed by and construed in accordance with the laws of the State of New York, without regard to principles of conflicts of law thereof.

(j) Cumulative Remedies . The remedies provided herein are cumulative and not exclusive of any remedies provided by law.

(k) Severability . The provisions of this Agreement are severable and, in the event that any court of competent jurisdiction shall determine that any one or more of the provisions or part of the provisions contained in this Agreement shall, for any reason, be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provision or part of a provision of this Agreement and this Agreement shall be reformed and construed as if such invalid or illegal or unenforceable provision, or part of such provision, had never been contained herein, so that such provisions would be valid, legal and enforceable to the maximum extent possible.

(l) Headings . The headings herein are for convenience only, do not constitute a part of this Agreement and shall not be deemed to limit or affect any of the provisions hereof.

IN WITNESS WHEREOF, the parties hereto have caused this Registration Rights Agreement to be duly executed by their respective authorized officers as of the date first above written.

ZIOPHARM ONCOLOGY, INC.

By: /s/ Jonathan Lewis
Name: Jonathan Lewis, MD, PhD
Title: Chief Executive Officer

INTREXON CORPORATION

By: /s/ Randal J. Kirk
Name: Randal J. Kirk
Title: Chief Executive Officer

ANNEX A
PLAN OF DISTRIBUTION

The Selling Stockholders and any of their pledgees, donees, transferees, assignees or other successors-in-interest may, from time to time, sell, transfer or otherwise dispose of any or all of their shares of Common Stock or interests in shares of Common Stock on any stock exchange, market or trading facility on which the shares are traded or in private transactions. These dispositions may be at fixed prices, at prevailing market prices at the time of sale, at prices related to the prevailing market price, at varying prices determined at the time of sale, or at negotiated prices. The Selling Stockholders may use one or more of the following methods when disposing of the shares or interests therein:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- through the writing or settlement of options, swaps, derivatives or other hedging transactions, whether through an options exchange or otherwise;
- broker-dealers may agree with the Selling Stockholders to sell a specified number of such shares at a stipulated price per share;
- in the over the counter market;
- a combination of any such methods of disposition; and
- any other method permitted pursuant to applicable law.

The Selling Stockholders may also sell shares under Rule 144 under the Securities Act, if available, rather than under this prospectus.

Broker-dealers engaged by the Selling Stockholders may arrange for other broker-dealers to participate in sales. Broker-dealers may receive commissions or discounts from the Selling Stockholders (or, if any broker-dealer acts as agent for the purchaser of shares, from the purchaser) in amounts to be negotiated, but, except as set forth in a supplement to this prospectus, in the case of an agency transaction will not be in excess of a customary brokerage commission in compliance with FINRA Rule 2440; and in the case of a principal transaction a markup or markdown in compliance with FINRA IM-2440 or the successor to such FINRA rules.

The Selling Stockholders may from time to time pledge or grant a security interest in some or all of the Shares owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell shares of Common Stock from time to time under the prospectus, or under an amendment to the prospectus under Rule 424(b) or other applicable provision of the Securities Act of 1933, as amended (the "Securities Act"), amending the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under the prospectus. The Selling Stockholders do not expect these commissions and discounts to exceed what is customary in the types of transactions involved.

There can be no assurance that any Selling Stockholder will sell any or all of the shares of Common Stock pursuant to the registration statement, of which this prospectus forms a part.

The Selling Stockholders may enter into option or other transactions with broker-dealers or other financial institutions or the creation of one or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares offered by the prospectus, which shares such broker-dealer or other financial institution may resell pursuant to the prospectus (as supplemented or amended to reflect such transaction).

The Selling Stockholders and any broker-dealer or agents that are involved in selling the shares of Common Stock may be deemed to be "underwriters" within the meaning of the Securities Act in connection with such sales. In such event, any commissions received by such broker-dealers or agents and any profit on the resale of Common Stock purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. In no event shall any broker-dealer receive fees, commission and markups which, in the aggregate, would exceed eight percent (8%). Each Selling Stockholder has informed the Company that it does not have any written or oral agreement or understanding, directly or indirectly, with any person to distribute the Common Stock.

We have advised each Selling Stockholder that it may not use shares registered on the registration statement of which this prospectus is a part to cover short sales of Common Stock made prior to the date on which the registration statement shall have been declared effective by the Securities and Exchange Commission. If a Selling Stockholder uses this prospectus for any sale of shares of our Common Stock, it will be subject to the prospectus delivery requirements of the Securities Act. The Selling Stockholders and any other person participating in such distribution will be subject to applicable provisions of the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder, including, without limitation, Regulation M of the Exchange Act, which may limit the timing of purchases and sales of any of the shares of Common Stock by the Selling Stockholders and any other participating person. Regulation M may also restrict the ability of any person engaged in the distribution of the shares of Common Stock to engage in market-making activities with respect to the shares of Common Stock. All of the foregoing may affect the marketability of the shares of Common Stock and the ability of any person or entity to engage in market-making activities with respect to the shares of Common Stock.

We may indemnify the Selling Stockholders against certain liabilities, including some liabilities under the Securities Act, in accordance with an agreement between us and the Selling Stockholders. We may be indemnified by the Selling Stockholders against civil liabilities, including liabilities under the Securities Act, that may arise from any written information furnished to us by the Selling Stockholders specifically for use in this prospectus, in accordance with the related registration rights agreement, or we may be entitled to contribution.

ZIOPHARM Oncology, Inc.

Selling Stockholder Notice and Questionnaire

The undersigned beneficial owner of common stock, $0.001 par value per share (the " Common Stock "), of ZIOPHARM Oncology, Inc. (the " Company "), (the " Registrable Securities ") understands that the Company has filed or intends to file with the Securities and Exchange Commission (the " Commission ") a registration statement (the " Registration Statement ") for the registration and resale under Rule 415 of the Securities Act of 1933, as amended (the " Securities Act "), of the Registrable Securities, in accordance with the terms of the Registration Rights Agreement, dated as of January 12, 2011 (the " Registration Rights Agreement "), between the Company and Intrexon Corporation. The purpose of this Questionnaire is to facilitate the filing of the Registration Statement under the Securities Act that will permit you to resell the Registrable Securities in the future. The information supplied by you will be used in preparing the Registration Statement. All capitalized terms not otherwise defined herein shall have the meanings ascribed thereto in the Registration Rights Agreement.

Certain legal consequences arise from being named as a selling stockholder in the Registration Statement and the related Prospectus. Accordingly, holders and beneficial owners of Registrable Securities are advised to consult their own securities law counsel regarding the consequences of being named or not being named as a selling stockholder in the Registration Statement and the related Prospectus.

NOTICE

The undersigned beneficial owner (the " Selling Stockholder ") of Registrable Securities hereby elects to include the Registrable Securities owned by it and listed below in Item 3 (unless otherwise specified under such Item 3) in the Registration Statement.

QUESTIONNAIRE

1. Name.

(a) Full Legal Name of Selling Stockholder

(b) Full Legal Name of Registered Holder (if not the same as (a) above) through which Registrable Securities Listed in Item 3 below are held:

(c) Full Legal Name of Natural Control Person (which means a natural person who directly or indirectly alone or with others has power to vote or dispose of the securities covered by this questionnaire):

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2. Address for Notices to Selling Stockholder:

Telephone:
Fax:
Contact Person:
E-mail address of Contact Person:

3. Beneficial Ownership of Registrable Securities:

(a) Type and Number of Registrable Securities beneficially owned:

4. Broker-Dealer Status:

(a) Are you a broker-dealer?

Yes ☐ No ☐

Note: If yes, the Commission's staff has indicated that you should be identified as an underwriter in the Registration Statement.

(b) Are you an affiliate of a broker-dealer?

Yes ☐ No ☐

Note: If yes, provide a narrative explanation below:

(c) If you are an affiliate of a broker-dealer, do you certify that you bought the Registrable Securities in the ordinary course of business, and at the time of the purchase of the Registrable Securities to be resold, you had no agreements or understandings, directly or indirectly, with any person to distribute the Registrable Securities?

Yes ☐ No ☐

Note: If no, the Commission's staff has indicated that you should be identified as an underwriter in the Registration Statement.

5. Beneficial Ownership of Other Securities of the Company Owned by the Selling Stockholder.

Except as set forth below in this Item 5, the undersigned is not the beneficial or registered owner of any securities of the Company other than the Registrable Securities listed above in Item 3.

(a) As of _____, 201___, the Selling Stockholder owned outright (including shares registered in Selling Stockholder's name individually or jointly with others, shares held in the name of a bank, broker, nominee, depository or in "street name" for its account), _____ shares of the Company's capital stock (excluding the Registrable Securities). If "zero," please so state.

(b) In addition to the number of shares Selling Stockholder owned outright as indicated in Item 5(a) above, as of _____, 201___, the Selling Stockholder had or shared voting power or investment power, directly or indirectly, through a contract, arrangement, understanding, relationship or otherwise, with respect to _____ shares of the Company's capital stock (excluding the Registrable Securities). If "zero," please so state.

If the answer to Item 5(b) is not "zero," please complete the following tables:

Sole Voting Power:

Number of Shares	Nature of Relationship Resulting in Sole Voting Power

Shared Voting Power:

Number of Shares	With Whom Shared	Nature of Relationship

Sole Investment power:

Number of Shares	Nature of Relationship Resulting in Sole Investment power

Shared Investment power:

Number of Shares	With Whom Shared	Nature of Relationship

(c) As of _____, 201___, the Selling Stockholder had the right to acquire the following shares of the Company's common stock pursuant to the exercise of outstanding stock options, warrants or other rights (excluding the Registrable Securities). Please describe the number, type and terms of the securities, the method of ownership, and whether the undersigned holds sole or shared voting and investment power. If "none", please so state.

6. Relationships with the Company:

Except as set forth below, neither the undersigned nor any of its affiliates, officers, directors or principal equity holders (owners of 5% of more of the equity securities of the undersigned) has held any position or office or has had any other material relationship with the Company (or its predecessors or affiliates) during the past three years.

State any exceptions here:

7. Plan of Distribution:

The undersigned has reviewed the form of Plan of Distribution attached as Annex A to the Registration Rights Agreement, and hereby confirms that, except as set forth below, the information contained therein regarding the undersigned and its plan of distribution is correct and complete.

State any exceptions here:

****

The undersigned agrees to promptly notify the Company of any inaccuracies or changes in the information provided herein that may occur subsequent to the date hereof and prior to the effective date of any applicable Registration Statement filed pursuant to the Registration Rights Agreement.

By signing below, the undersigned consents to the disclosure of the information contained herein in its answers to Items 1 through 7 and the inclusion of such information in each Registration Statement filed pursuant to the Registration Rights Agreement and each related Prospectus. The undersigned understands that such information will be relied upon by the Company in connection with the preparation or amendment of any such Registration Statement and the related Prospectus.

By signing below, the undersigned acknowledges that it understands its obligation to comply, and agrees that it will comply, with the provisions of the Exchange Act and the rules and regulations thereunder, particularly Regulation M. The undersigned also acknowledges that it understands that the answers to this Questionnaire are furnished for use in connection with Registration Statements filed pursuant to the Registration Rights Agreement and any amendments or supplements thereto filed with the Commission pursuant to the Securities Act.

The undersigned hereby acknowledges and is advised of the following Interpretation A.65 of the July 1997 SEC Manual of Publicly Available Telephone Interpretations regarding short selling:

"An Issuer filed a Form S-3 registration statement for a secondary offering of common stock which is not yet effective. One of the selling shareholders wanted to do a short sale of common stock "against the box" and cover the short sale with registered shares after the effective date. The issuer was advised that the short sale could not be made before the registration statement become effective, because the shares underlying the short sale are deemed to be sold at the time such sale is made. There would, therefore, be a violation of Section 5 if the shares were effectively sold prior to the effective date."

By returning this Questionnaire, the undersigned will be deemed to be aware of the foregoing interpretation.

I confirm that, to the best of my knowledge and belief, the foregoing statements (including without limitation the answers to this Questionnaire) are correct.

IN WITNESS WHEREOF the undersigned, by authority duly given, has caused this Questionnaire to be executed and delivered either in person or by its duly authorized agent.

Dated: _____

Beneficial Owner: _____

By: _____
Name:
Title:

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the Registration Statements on Forms S-8 (File Nos. 333-129884, 333-134280, 333-142701, 333-160496 and 333-167925) and Forms S-3 (File Nos. 333-129680, 333-134279, 333-141014, 333-161453, 333-162160, 333-163517 and 333-166444) of ZIOPHARM Oncology, Inc. of our report dated February 28, 2011 relating to our audit of the financial statements and the effectiveness of internal control over financial reporting, which appears in this Annual Report on Form 10-K of ZIOPHARM Oncology, Inc. for the year ended December 31, 2010.

/s/McGladrey & Pullen, LLP

Boston, Massachusetts
February 28, 2011

Exhibit 23.2

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

As independent registered public accountants, we hereby consent to the incorporation by reference of the report of Caturano and Company, P.C. (whose name has since been changed to Caturano and Company, Inc.) dated March 17, 2010 relating to the financial statements of ZIOPHARM Oncology, Inc. as of December 31, 2009, and for each of the years in the two-year period ended December 31, 2009 and from September 9, 2003 (date of inception) through December 31, 2009, included in or made part of this Form 10-K, into the Company's previously filed Registration Statements on Forms S-8 (File Nos. 333-129884, 333-134280, 333-142701 and 333-160496) and Forms S-3 (File Nos. 333-129680, 333-134279, 333-141014, 333-161453, 333-162160, 333-163517 and 333-166444).

/s/ Caturano and Company, Inc,

Boston, Massachusetts
February 28, 2011

Exhibit 31.1

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER

I, Jonathan Lewis, certify that:

1. I have reviewed this annual report on Form 10-K of ZIOPHARM Oncology, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

    a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

    c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

    a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

    b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 1, 2011

/s/ Jonathan Lewis

Jonathan Lewis, Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER

I, Richard Bagley, certify that:

1. I have reviewed this annual report on Form 10-K of ZIOPHARM Oncology, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

    a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

    c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

    a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

    b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 1, 2011

/s/ Richard E. Bagley
Richard E. Bagley, President and Chief Financial Officer
(Principal Financial and Accounting Officer)

Exhibit 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of ZIOPHARM Oncology, Inc. (the "Company") on Form 10-K for the year ended December 31, 2010, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Jonathan Lewis, Principal Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

/s/ Jonathan Lewis
Jonathan Lewis, Chief Executive Officer
(Principal Executive Officer)
March 1, 2011

Exhibit 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of ZIOPHARM Oncology, Inc. (the "Company") on Form 10-K for the year ended December 31, 2010, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Richard Bagley, Principal Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

/s/ Richard E. Bagley
Richard E. Bagley, President and Chief Financial Officer
(Principal Financial and Accounting Officer)
March 1, 2011