rexahn
PHARMACEUTICALS

# 2011 Annual Report

*Saving Lives through Innovation*

Rexahn Pharmaceuticals, Inc

**Pipeline Overview:**

Rexahn's diverse portfolio of oncology compounds is unique for a company of its size. Our collection of eight differentiated oncology assets span major classes of cancer drugs and have the potential to drive Rexahn's value for many years to come.

The most clinically-advanced compound in our oncology program is Archexin®, a novel first-in-class Akt-1 inhibitor with FDA orphan designation in the treatment of cancers in various solid tumors, including pancreatic and ovarian cancer. Archexin specifically blocks the production of Akt-1, a molecule that plays a central role in the uncontrolled growth of tumor mass, and therefore may play an important role in cancer chemotherapy with improved efficacy and tolerability. Archexin is in Phase II clinical trials for the treatment of pancreatic cancer with results expected in Q3, 2012.

Another rapidly-advancing compound is RX-3117, a best-in-class cytotoxic antimetabolite nucleoside compound, which is being co-developed with Teva Pharmaceutical Industries for the treatment of several cancers, including pancreatic cancer. Preclinical studies have shown RX-3117 to have a high bioavailability and superior toxicity profile compared to gemcitabine, the current first-line therapy for pancreatic and other cancers. In early 2012, RX-3117 began a Phase I, exploratory, first-in-human clinical trial of RX-3117 with preliminary results expected in Q3, 2012.

A compound that we are particularly excited about is RX-5902, which represents the first of what we expect to be a growing family of quinoxaline-derived compounds. To date, RX-5902 has shown to be a novel regulator of p68 RNA helicase, which is known to play a vital role in cell proliferation, gene transcription and translation. An IND is expected to be filed in Q2, 2012.

Rexahn's extended portfolio of oncology drug candidates features:

**RX-8243** is a novel isoquinolinamine analogue that inhibits Ark1 (*Aurora A)* kinase and other Ser/Thr kinase in cancer cells. RX-8243 is a multikinase inhibitor that downregulates signal molecules of RAS as well as PI3K pathways such as activated forms of ERK, p38, and Akt. Preclinical studies showed that RX-8243 blocks tumor growth in xenograft models at low nanomolar concentrations.

**RX-1792** is a quinazoline analogue that inhibits EGFR (epidermal growth factor receptor), a critical component of tumor growth and metastasis. Preclinical studies showed that RX-1792 inhibits tumor growth in xenograft models.

**RX-0047-N** is a potent inhibitor of HIF-1α, a key transcription factor involved in cancer cell survival, metastasis, and angiogenesis. Studies in xenograft models showed that RX-0047 inhibits tumor growth in the lung and prostate and blocks metastasis. RX-0047-N is a nanoliposomal product of RX-0047 with high incorporation efficiency and good stability.

**RX-0201-N** is a first-in-class, potent inhibitor of Akt protein kinase in the treatment of cancer. Akt regulates signal processes of cell proliferation and survival, angiogenesis, and drug resistance in cancer. RX-0201-N is a nanoliposomal product of RX-0201 with high incorporation efficiency and good stability.

**RX-21101** is an anticancer polymer drug conjugate that can overcome the downside of cytotoxic compounds, such as poor solubility, stability, and severe adverse reactions. Conjugating water-soluble and non-toxic HPMA to conventional anticancer compounds bolster efficacy while lowering toxicity by specific tumor targeting and increased stability in the body.

Rexahn's robust oncology portfolio is augmented by a pipeline of clinical-stage central nervous system (CNS) compounds. Rexahn's CNS assets, Serdaxin® for major depressive disorder (MDD) and Zoraxel™ for erectile dysfunction (ED), have each progressed into Phase II clinical trials. Both of these partnerable clinical-stage drugs offer novel approaches to treating substantial, underserved markets.

**Chairman Letter:**

Dear fellow stockholder:

2011 was a year of adapting to market events and tuning our strategy for long-term success. With the disappointing results of our Serdaxin Phase IIb trial, Rexahn made the decision to focus in the near term on our oncology program. We made this decision after careful deliberation of how best to apply the firm's resources to realize near-term value appreciation for our shareholders. Oncology is an area where we have a particularly strong expertise, a promising pipeline, and potential to make an impact.

As a result, I am pleased to report that we have made meaningful strides in our oncology program, driving short-term value as well as our longer-term competitive position.

Of note, we advanced Archexin into a Phase II clinical trial in pancreatic cancer and have completed patient enrollment. We expect to report top-line results from this trial in late 2012. Archexin is a first in class, potent Akt protein kinase inhibitor with the potential to inhibit cancer cell survival and proliferation, angiogenesis, and drug resistance. Archexin has FDA orphan drug designation for five different cancer types, including renal cell carcinoma, glioblastoma, pancreatic, stomach, and ovarian cancers.

We continue to advance the clinical program for RX-3117 as well. This compound is partnered with Teva Pharmaceutical Industries Limited. Preclinical studies have shown the compound's high bioavailability and good safety profile are superior to the current first-line therapy for pancreatic and other cancers. In early 2012, we started a Phase I exploratory, first-in-human clinical trial of RX-3117 and expect to have preliminary results before the end of the year.

Additionally, Rexahn has built a significant intellectual property position in the class of chemicals called quinoxalines, which we believe can give birth to new class of potent oncology compounds. The first of those quinoxaline compounds is RX-5902. This first-in-class agent for RNA helicase inhibition is an exciting preclinical oncology asset that has extremely potent anti-tumor properties, and that also exhibits strong anti-proliferative activity against known drug-resistant cancer cells, as well as a synergistic effect with known anti-cancer drugs. We are working to advance RX-5902 into clinical testing in 2012.

With respect to our CNS portfolio, I want to make it clear to shareholders that despite Serdaxin's clinical trial setback, we believe that both Serdaxin and Zoraxel are substantive assets. To maximize the value of these assets for shareholders, we

are actively evaluating strategic options that will enable us to further develop these drugs.

Given the depth of Rexahn's portfolio of assets there is ample reason to be enthusiastic about the company's prospects. We expect that 2012 will be another critical year for the company, as we work to advance and expand our oncology pipeline, and find alternative approaches to advancing our CNS portfolio.

On behalf of our Board and our employees, I would like to thank you all for your continued support.

Sincerely,

Chang H. Ahn, Ph.D.
Chairman and CEO

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

# Form 10-K

☑ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
**For the fiscal year ended December 31, 2011**

**OR**

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
**For the transition period from to**

**Commission file number: 001-34079**

# Rexahn Pharmaceuticals, Inc.

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

| **Delaware** | **11-3516358** |
|---|---|
| *(State or other jurisdiction of incorporation or organization)* | *(I.R.S. Employer Identification No.)* |
| **15245 Shady Grove Road, Suite 455 Rockville, Maryland** | **20850** |
| *(Address of principal executive offices)* | *(Zip Code)* |

**(240) 268-5300**
*(Registrant's telephone number, including area code)*

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

| **Title of Each Class** | **Name of Each Exchange on Which Registered** |
|---|---|
| **Common Stock, $.0001 par value per share** | **NYSE AMEX** |

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

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

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

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

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☑ No ☐

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

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

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

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

State the aggregate market value of the voting and non-voting common equity held by non-affiliates computed by reference to the price at which the common equity was last sold, or the average bid and asked price of such common equity, as of the last business day of the registrant's most recently completed second fiscal quarter: **As of June 30, 2011, the aggregate market value of the registrant's common stock held by non-affiliates of the registrant was $93,016,125 based on the closing price reported on NYSE Amex.**

Indicate the number of shares outstanding of each of the registrant's classes of common stock, as of the latest practicable date:

| Class | Outstanding at March 15, 2012 |
|---|---|
| Common Stock, $.0001 par value per share | 95,345,656 shares |

**DOCUMENTS INCORPORATED BY REFERENCE**

| Document | Parts Into Which Incorporated |
|---|---|
| Portions of the registrant's Proxy Statement for the Annual Meeting of Stockholders to be held on June 18, 2012 | Part III |

**Cautionary Statement Regarding Forward-Looking Statements.** This Annual Report on Form 10-K contains statements (including certain projections and business trends) accompanied by such phrases as "believe," "estimate," "expect," "anticipate," "will," "intend" and other similar expressions, that are "forward-looking statements" as defined in the Private Securities Litigation Reform Act of 1995. We caution that forward-looking statements are based largely on our expectations, and are subject to a number of known and unknown risks and uncertainties that are subject to change based on factors which are, in many instances, beyond our control. Actual results, performance or achievements may differ materially from those contemplated, expressed, or implied by the forward-looking statements.

The following factors, among others, could cause our financial performance to differ materially from that expressed in such forward-looking statements:

- our lack of profitability and the need for additional capital to operate our business;
- our ability to obtain the necessary U.S. and worldwide regulatory approvals for our drug candidates;
- successful and timely completion of clinical trials for our drug candidates;
- demand for and market acceptance of our drug candidates;
- the availability of qualified third-party researchers and manufacturers for our drug development programs;
- our ability to develop and obtain protection of our intellectual property; and
- other risks and uncertainties, including those set forth herein under the caption "Risk Factors" and those detailed from time to time in our filings with the Securities and Exchange Commission.

These forward-looking statements are made only as of the date hereof, and we undertake no obligation to update or revise the forward-looking statements, whether as a result of new information, future events or otherwise. The safe harbors for forward-looking statements provided by the Private Securities Litigation Reform Act are unavailable to issuers of "penny stock." Our shares may be considered a penny stock and, as a result, the safe harbors may not be available to us.

**REXAHN PHARMACEUTICALS, INC.**

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## PART I

### Item 1. Description of Business

Any references to "we," "us," "our," the "Company" or "Rexahn" shall mean Rexahn Pharmaceuticals, Inc.

We are a development stage biopharmaceutical company focusing on the development of novel cures for cancer to patients worldwide. Our mission is to discover and develop new medicines for diseases that plague patients with no effective cures, in particular high mortality cancers. Our pipeline features one drug candidate in Phase II clinical trials this year and several other drug candidates in pre-clinical development. Our strategy is to continue building a significant product pipeline of innovative medicines that we will commercialize alone or with pharmaceutical partners. In addition, we have two CNS candidates, Serdaxin and Zoraxel, that are in clinical stages and we are exploring options for further development. For a description of our pipeline drug candidates, see "Our Pipeline Drug Candidates" in this Item 1.

Our principal corporate office is located at 15245 Shady Grove Road, Suite 455, Rockville, Maryland 20850 in Maryland's I-270 technology corridor. Our telephone number is (240) 268-5300.

Rexahn currently has one clinical stage oncology candidate: Archexin, an inhibitor of the protein kinase Akt. Akt plays critical roles in cancer cell proliferation, survival, angiogenesis, metastasis, and drug resistance. Archexin received "orphan drug" designation from the U.S. Food and Drug Administration ("FDA") for five cancer indications (renal cell carcinoma ("RCC"), glioblastoma, ovarian cancer, stomach cancer and pancreatic cancer). The FDA orphan drug program enables expedited FDA review or approval process, seven years of marketing exclusivity after approval and tax incentives for clinical research. Archexin is currently in Phase II clinical trials for the treatment of pancreatic cancer with enrollment completed in 2011 and results expected in the third quarter of 2012.

Serdaxin is a developmental stage drug candidate for major depressive disorder. ("MDD") Rexahn completed a 300 patient Phase IIb clinical trial for MDD with Serdaxin in 2011. On November 4, 2011, we released the results of the clinical trial which showed Serdaxin was similar to placebo as measured by a change in the Montgomery-Asberg Depression Rating Scale ("MADRS"). All groups showed an approximate 14 point improvement in the protocol defined primary endpoint of MADRS, and had a substantial number of patients who demonstrated a meaningful clinical improvement from baseline. The study showed that Serdaxin was safe and well tolerated. At this point, we have not made a determination of Serdaxin's future paths and are currently not allocating resources to further develop Serdaxin to treat MDD.

Zoraxel is a developmental stage drug for sexual dysfunction that directly modulates the sexual activity control center in the brain. Zoraxel enhances the action of serotonin and dopamine, brain signaling molecules that play a key role in three phases of male sexual activity: arousal, erection and release. Zoraxel is the first erectile dysfunction ("ED") therapeutic to affect all three of these phases. Preclinical studies demonstrated that Zoraxel improves sexual performance via enhanced motivation and arousal. Due to its centrally acting mechanism of action, Zoraxel may also have potential use in the treatment of female sexual dysfunction. Given the recently reported results of the Serdaxin Phase IIb clinical trial, and the fact that Zoraxel and Serdaxin share a common active ingredient, we are evaluating how to proceed with the Phase IIb study of Zoraxel.

## Company Background

Our company resulted from a merger of Corporate Road Show.Com Inc., originally a New York corporation (CPRD) which was formed in November 1999, and Rexahn, Corp, a Maryland corporation immediately after giving effect to a 1-for-100 reverse stock split and the reincorporation of CPRD as a Delaware corporation under the name "Rexahn Pharmaceuticals, Inc." (Rexahn Pharmaceuticals), with Rexahn, Corp surviving as a wholly owned operating subsidiary of ours (the Merger). The Merger was effective as of May 13, 2005. On September 29, 2005, Rexahn, Corp merged with and into us, and Rexahn, Corp's separate existence was terminated.

Rexahn, Corp was founded in March 2001 and began as a biopharmaceutical company focusing on oncology drugs. Dr. Chang Ahn, our Chairman, a former U.S. Food and Drug Administration (FDA) reviewer, and National Cancer Institute (NCI) research scientist, helped guide initial research and commercialization efforts in targeted cancer drugs and the company's expansion into CNS disorders. Our mission is to find new cures that improve the health and wellness of patients with life-threatening or life-altering diseases.

## Industry and Disease Markets

### *Overview*

Our research and development focuses on several therapeutic areas that affect the lives of many people—cancer, and to a lesser extent, CNS disorders such as depression, mood disorders, and sexual dysfunction. These disorders can have a debilitating effect on the quality of life for patients who suffer from them. Our strategy is to develop innovative drugs that alter the signaling pathways implicated in these diseases, and thereby help patients regain an improved quality of life.

According to the Center for Disease Control and Prevention, cancer claims the lives of more than half a million Americans each year and is the second leading cause of death among Americans. In 2010, the National Cancer Institute estimated that the overall cost of cancer was $264 billion and approximately 1.6 million new cancer cases were diagnosed in 2011.[1] Global sales of cancer drugs are predicted to grow to $70 billion by 2018 in the seven major markets, driven mainly by commercialization of molecular targeted therapies.[2]

Currently, there are 45 million estimated cases of depression in the US and its drug cost alone exceeded $19 billion in 2007. Several classes of drugs are available on the market for depression, including selective serotonin uptake inhibitors ("SSRI"), serotonin-norepinephrine reuptake inhibitors ("SNRI"), and tricyclic antidepressants ("TCA"). However, these drugs are prone to side-effects, such as insomnia, weight gain and sexual dysfunction, and they can take up to 6 weeks to relieve depression symptoms.

Erectile dysfunction causes the consistent inability to attain and maintain an erection sufficient for satisfactory sexual intercourse. Erectile problems may be due to psychogenic causes (e.g., depression or stress), organic causes, or both. The launch of the first orally available phosphodiesterase (PDE)-5 inhibitor, Viagra®, in 1998 established a new standard of care for ED and pioneered a new market. Cialis® and Levitra® were subsequently launched in 2003 as second-generation PDE-5 inhibitor drugs.

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1. Cancer Facts and Figures 2011 (American Cancer Society)
2. Cancer Market and Definition Overview, 2009 (Datamonitor).

However, 30% of patients are refractory or unresponsive to the leading PDE-5 inhibitor drugs. In addition, PDE-5 inhibitors also increase the risk of a variety of cardiovascular diseases, including heart attack. As evidenced by clinical data from the Phase IIa trial, Zoraxel does not have some of the safety concerns seen with PDE-5 inhibitors. Contrary to peripherally acting PDE-5 inhibitors, Zoraxel acts centrally in the brain affecting all three aspects of sexual activity.

***Current Cancer Treatments***

The life-threatening nature of cancer, and the various ways of trying to cure cancer to save lives, has led to treatment(s) with surgery, radiation therapy, and chemotherapy. Surgery is widely used to treat, and in many cases cure cancer; however, there may be related or significant complications and surgery may be ineffective if metastasis has occurred. Radiation therapy, or radiotherapy, can be highly effective. Ionizing radiation deposits energy that injures or destroys cells in the area being treated by damaging their genetic material, making it impossible for these cells to continue to grow. Although radiation damages both cancer cells and normal cells, the normal cells are generally able to repair themselves and function properly. Cytotoxic cancer drugs destroy cancer cells by interfering with various stages of the cell division process. However, many current cytotoxic chemotherapy drugs have limited efficacy and debilitating adverse side effects and may result in the development of multi-drug resistance.

***Unmet Needs in Cancer***

Despite significant advances in cancer research and treatments, high unmet needs still remain including:

- **Long-term management of cancers:** Surgery, chemotherapy or radiation therapy may not result in long-term remission, though surgery and radiation therapies are considered cure methods. Therefore, there is a need for more effective drugs and adjuvant therapies to treat relapsed and refractory cancers.

- **Multi-drug resistance:** Multi-drug resistance is a major obstacle in successful clinical outcomes.

- **Debilitating toxicity by chemotherapy:** Chemotherapy as a mainstay of cancer treatment induces severe adverse reactions and toxicities, affecting quality of life or life itself.

***Archexin*: *First-in-class Anticancer Akt Inhibitor***

Archexin is a first-in-class, potent inhibitor of the Akt protein kinase (Akt) in cancer cells. Archexin has FDA orphan drug designations for five cancers (RCC, glioblastoma, and cancers of the ovary, stomach and pancreas). Multiple indications for other solid tumors can also be pursued. Archexin is differentiated by its ability to inhibit both activated and inactivated forms of Akt, and to potentially reverse the drug resistance observed with the protein kinase inhibitors. Other targeted drugs may only inhibit inactivated Akt and be vulnerable to development of drug resistance. Akt activation plays a key role in cancer cell proliferation, survival, angiogenesis and drug resistance. Akt is over-activated in many human cancers (e.g., breast, colorectal, gastric, pancreatic, prostate, and melanoma cancers). A method to control the Akt activity involves inhibition of signaling molecules upstream of Akt in cancer cells (e.g., EGFR or VEGFR inhibitors). In this case, only the activity of native Akt is indirectly affected. However, signal transmission for cancer progression and resistance occurs when Akt is activated, thus inhibition of the activated Akt becomes more important. Archexin inhibits both activated and native Akt.

Archexin is an antisense oligonucleotide ("ASO") compound that is complementary to Akt mRNA, and highly selective for inhibiting mRNA expression and production of Akt protein. Archexin has demonstrated excellent safety, tolerability and minimal side effects in a Phase I study in patients with advanced cancers, where Grade 3 fatigue was the only dose-limiting toxicity and no significant hematological abnormalities were observed. The main objectives of the Phase I study were to determine maximum tolerated dose, dose limiting toxicity, and pharmacokinetic parameters for Archexin monotherapy. The Archexin Phase I study design was an open label, single arm ascending dose, safety and tolerability study. Archexin is currently in Phase II clinical trials for the treatment of pancreatic cancer with enrollment completed in September, 2011, and with results currently anticipated in the third quarter of 2012.

The Company has been issued a U.S. patent for Archexin that covers composition of matter and broad claims for the nucleotide sequences of the antisense compounds that target and inhibit the expression of Akt in human tissues or cells, and the method of using the compounds to induce cytotoxicity in cancer cells.

***Current CNS Treatments***

The U.S. National Institute of Mental Health estimates that 26 percent of adults, or more than 55 million Americans, suffer from a diagnosable mental disorder in a given year. The depression market is one of the more mature and established markets in CNS therapeutics. Current treatments for depression focus on serotonin-based drugs (e.g., selective serotonin reuptake inhibitors) as a first-line treatment. Many depression patients are refractory to the various classes of antidepressants and suffer from severe side effects.

***Unmet Needs in CNS Disorders: Major Depressive Disorder***

Unmet needs for treating MDD include[3] the following:

- **Faster onset of action.** Current antidepressants take four to six weeks to relieve depression symptoms. The delay in onset of antidepressant activity is associated with the most common antidepressant drug classes including: selective serotonin reuptake inhibitors (SSRIs), serotonin-norepinephrine reuptake inhibitors (SNRIs), monoamine oxidase inhibitors (MAOIs), and tricyclic antidepressants (TCAs).

- **Fewer side effects.** The most widely used antidepressants, SSRIs, are linked with side effects of insomnia, weight gain and sexual dysfunction. The safety of SSRIs has also been called into question over concerns about inducing suicidal ideations. Use of benzodiazepines is linked with side effects of cognitive deficit and motor impairment.

- **Improved compliance.** High rate of serious side effects among patients taking anti-depressant drugs leads many to stop taking the prescribed medicines, resulting in high non-compliance rates of 40% to 65%.

- **Need for greater efficacy.** Remission is one key objective of depression treatment. The proportion of patients achieving remission after antidepressant treatment ranges from 35% to

3 Depression, June 2007; Stakeholder Insight: Major Depressive Disorder (MDD), March 2006 (Datamonitor).

55% depending on the severity of depression.[4] New drugs with much higher efficacy as well as wider coverage of the depression patients are needed.

- **Reduced MDD relapse**. High relapse rate of about 35% and lingering symptoms are serious problems in antidepressant treatment.

***Serdaxin: CNS Drug to Treat Neurodegenerative Disorders, Depression, and Mood Disorders***

Serdaxin is an extended release formulation of clavulanic acid, which is an ingredient present in antibiotics approved by the FDA. We had been developing Serdaxin for the treatment of depression and neurodegenerative disorders. From January to September, 2011, we conducted a randomized, double-blind, placebo-controlled study compared two doses of Serdaxin, 0.5 mg and 5 mg, to placebo over an 8-week treatment period for MDD patients. On November 4, 2011, we released results that the study showed Serdaxin was similar to a placebo as measured by a change in MADRS scores. All groups showed an approximate 14 point improvement in the protocol defined primary endpoint of MADRS, and had a substantial number of patients who demonstrated a meaningful clinical improvement from baseline. The study showed that Serdaxin was safe and well tolerated. At this point, we have not made a determination of Serdaxin's future paths or resource allocations to further develop Serdaxin to treat MDD.

***Current Sexual Dysfunction Treatment***

The launch of the first orally available PDE-5 inhibitor, Viagra, in 1998 established a new standard care for ED and pioneered a new market. Cialis and Levitra were subsequently launched in 2003 as second-generation PDE-5 inhibitor drugs. However, 30% of patients are refractory to the leading PDE-5 inhibitor drugs. In addition, PDE-5 inhibitors also increase the risk of a variety of cardiovascular diseases, including heart attack. The majority of ED drugs in the R&D pipeline work by a 'me-too' PDE-5 inhibitor mechanism of action.[5] Dopamine agonists are also in clinical trials for ED.[6]

***Unmet Needs in Sexual Dysfunction***

There are potential severe side effects associated with PDE-5 drugs, such as priapism, severe hypotension, myocardial infarction, sudden death, increased intraocular pressure and sudden hearing loss. PDE-5 inhibitors only target end organ erectile function, and work in peripheral blood vessels. Other than PDE-5 inhibitors, there are no dominating drugs for treatment of sexual dysfunction.

- **Need for Greater Efficacy**- An estimated 30% of US men are refractory to the leading PDE-5 inhibitor drugs (Viagra, Cialis, and Levitra), which work peripherally and mechanically. Certain segments of the ED patient population that respond less to PDE-5 inhibitors include diabetics, obese or post-surgical prostatectomy or coronary risk patients.

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[4] Remission rates tend to vary based on factors such as: treatment algorithm and drugs prescribed, patient geographic population or country, prescribing doctor (primary care, psychiatrist), and time at which remission rates are measured (3, 6, 8, or 10 weeks of treatment). Depression, June 2007; MDD, March 2006 (Datamonitor).

[5] Erectile Dysfunction, 2006 (Datamonitor).

[6] Gresser U and Gleiter CH. Erectile Dysfunction: Comparison of efficacy and side effects of the PDE-5 inhibitors sildenafil, vardenafil and tadalafil (Review of Literature). Eur J Med Res (2002) 7:435-46.

- **Reduced Side Effects**- PDE-5 inhibitors have significant drawbacks of cardiovascular risks and other side effects (e.g., priapism, severe hypotension, myocardial infarction, ventricular arrhythmias, sudden death and increased intraocular pressure).

***Zoraxel: Drug Candidate to Treat Erectile Dysfunction Sexual Dysfunction***

Zoraxel is centrally acting in the CNS and may be a more effective ED treatment for patients who are responsive or unresponsive to PDE-5 inhibitors. Zoraxel is an orally administered, on-demand tablet to treat sexual dysfunction, and has extensive and well-established safety in humans. Zoraxel is a dual enhancer of neurotransmitters in the brain that play a key role in sexual activity phases of motivation and arousal, erection and release, and may be the first ED drug to affect all three of these phases of sexual activity. In preclinical animal studies, Zoraxel significantly improved sexual performance and suggested positive behavioral effects, however, Given the recently reported results of the Serdaxin Phase IIb clinical trial, and the fact that Zoraxel and Serdaxin share a common active ingredient, we are currently evaluating how to proceed with the Phase IIb study of Zoraxel.

**Market Opportunity**

There are several factors favorable for commercializing new cancer, CNS and sexual dysfunction drugs that may be first-in-class or market leaders, including:

- *Expedited Regulatory or Commercialization Pathways*. Drugs for life-threatening diseases such as cancer are often treated by the FDA as candidates for fast track, priority and accelerated reviews. Expedited regulatory review may lead to clinical studies that require fewer patients, or expedited clinical trials.

- *Favorable Environment for Formulary Access and Reimbursement*. Cancer drugs with proven efficacy or survival benefit, and cost-effective clinical outcomes would be expected to gain rapid market uptake, formulary listing and payer reimbursement. In addition, drugs that have orphan designations are generally reimbursed by insurance companies given that there are few, if any, alternatives. Because mental disorders affect more than 55 million estimated Americans, the burden of illness is significant for insurance companies as well as for employers. Given the significant cost of treating behavioral health problems, there is a favorable environment for formulary access and reimbursement for effective products that treat multiple disorders.

- *Focus on Specialty Markets*. The marketing of new drugs to specialty physicians can be accomplished with a specialty sales force that requires fewer personnel and lower related costs than a typical sales force that markets to primary care physicians and general practitioners.

**Our Strategy**

Our strategy has several key components:

***Develop innovative therapeutics with the potential to be first-in-class or market leaders***

We plan to expand our R&D pipeline and introduce more new drugs into clinical trials over the next five years, and develop an industry-leading oncology therapeutics franchise. Our pipeline spans the

major classes of cancer drugs – molecular targeted therapies, signal transduction and multi-kinase inhibitors, nano-medicines, and small molecule cytotoxics (microtubule inhibitors, quinazoline and nucleoside analogues). Differentiated target product profiles and proprietary discovery and research technology platforms further support these strategic efforts.

***Target Signal Transduction Molecules with Multiple Drug Candidates***

We plan to expand our oncology drug candidate pipeline and introduce several new signal inhibitor drugs into clinical trials over the next five years. By identifying and characterizing the genes and proteins that control the signaling pathways and gene expression of cancer cells, we seek to develop DNA/RNA-based and small-molecule drugs to treat a broad range of diseases caused by abnormal expression or functions of those genes and proteins.

***Establish Partnerships with Large Pharmaceutical Companies***

In September 2009, we closed on licensing and stock purchase agreements with Teva Pharmaceutical Industries ("Teva") for the development of our novel anti-cancer compound, RX-3117. The companies reached an agreement with respect to the commercialization and development of RX-3117. In January, 2011, we closed on an additional private placement with Teva, pursuant to the 2009 stock purchase agreement, which was amended to increase the amount of Teva's investment for the further development of RX-3117 and provided for a possible third amendment by Teva. We seek to establish strategic alliances and partnerships with large pharmaceutical companies for the development of other drug candidates.

***Clinically Develop Drug Candidates as Orphan Drugs to Reduce Time-to-Market***

Under the Orphan Drug Act, the FDA may expedite approval of new drugs that treat diseases affecting less than 200,000 patients each year. This category of diseases is called an "orphan indication." Incentives in the Orphan Drug Act include a faster time-to-market of the drug (with FDA approval possible after Phase II trials instead of Phase III trials) and seven years of drug marketing exclusivity for the sponsor. We plan to develop drug candidates initially for orphan category cancers in order to reduce the time-to-market.

***In-License Unique Technology***

We continually review opportunities to in-license and advance compounds in oncology and other strategic therapeutic areas that have value creating potential and will strengthen our R&D pipeline. For example, in February 2005, we licensed the intellectual property of Revaax Pharmaceuticals LLC ("Revaax") to develop new drugs for treatment of CNS and mood disorders.

***Capitalize on Our Management Team's Expertise for Drug Development and Product Commercialization***

Our management team possesses clinical development experience in oncology and several other therapeutic areas that facilitates strategic approaches to and competitive advantages in, the design, risk assessment, and implementation of drug development programs. We also have prior experience in pharmaceutical alliances, product launches and marketing.

**Our Pipeline Drug Candidates**

We have three clinical stage drug candidates, and several pre-clinical drugs, consisting of the following:

Clinical Stage Pipeline:

(1) Archexin: First-in-class anticancer Akt inhibitor

(2) Serdaxin: CNS Disorders drug for depression and neurodegenerative diseases

(3) Zoraxel: ED and sexual dysfunction drug

Pre-clinical Pipeline:

(1) RX-1792: Small molecule anticancer EGFR inhibitor

(2) RX-5902: Small molecule anticancer RNA helicase regulator

(3) RX-3117: Small molecule anticancer DNA synthesis Inhibitor

(4) RX-8243: Small molecule anticancer aurora kinase inhibitor

(5) RX-0201-Nano: Nanoliposomal anticancer Akt inhibitor

(6) RX-0047-Nano: Nanoliposomal anticancer HIF-1 alpha inhibitor

(7) RX-21101: Nano-polymer Anticancer

We have discussed our clinical stage pipeline in detail above.

*Pre-clinical Pipeline*

Our pre-clinical pipeline includes:

*(1) RX-1792: Small molecule anticancer EGFR inhibitor*

RX-1792 is a quinazoline analogue that suppresses EGFR (epidermal growth factor receptor), critical component of tumor growth and metastasis. Preclinical studies have shown RX-1792 to inhibit tumor growth in xenograft human tumor models.

*(2) RX-5902: Small molecule anticancer RNA helicase regulator*

RX-5902 is a novel regulator of p68 RNA helicase regulator, which is known to play a vital role in cell proliferation, initiation of gene transcription and has been implicated in tumor/cancer progression. Studies demonstrated superior inhibition in the growth of human pancreatic tumor, renal tumor, and melanoma tumor in nude mice after oral administration, without body weight decrease. RX-5902 may enter Phase I clinical trials during the first half of 2012.

(3) *RX-3117*: *Small molecule anticancer DNA synthesis inhibitor*

RX-3117 is being co-developed with Teva for the treatment of cancer cells. RX-3117 has shown potent anti-tumor effects in xenograft human tumor models. Preclinical studies revealed the high bioavailability and superior toxicity profile compared to gemcitabine, the current first-line therapy for pancreatic and other cancers. This compound may enter an exploratory early stage clinical trial during the first quarter of 2012.

*(4) RX-8243: Small molecule anticancer aurora kinase inhibitor*

RX-8243 is a novel isoquinolinamine analogue that inhibits Ark1 *(*Aurora) kinase and other Ser/Thr kinase in cancer cells. RX-8243 is a multikinase inhibitor that downregulates signal molecules of RAS as well as PI3K pathways such as activated forms of ERK, p38 and Akt. Preclinical studies showed RX-8243 blocks tumor growth in xenograft models at low nanomolar concentrations.

*(5) RX-0201-Nano: Nanoliposomal anticancer Akt inhibitor*

RX-0201, the active ingredient of Archexin, is a first-in-class, potent inhibitor of the Akt protein kinase. RX-0201-Nano is a nanoliposomal product of RX-0201 with high incorporation efficiency and good stability. Nanoliposomal delivery of RX-0201 may provide significant clinical benefits including targeted higher cellular uptake, extended circulation time, reduced drug-related toxicity, and improved efficacy.

*(6) RX-0047-Nano: Nanoliposomal anticancer HIF-1α inhibitor*

RX-0047 is a potent inhibitor of HIF-1α, a key transcription factor involved in cancer cell survival, metastasis, and angiogenesis.. Studies in xenografted model have shown RX-0047 to inhibit tumor growth in lung and prostate and blocks metastasis. RX-0047-Nano is a nanoliposomal product of RX-0047 with high incorporation and good stability.

*(7) RX-21101: Nano-polymer Anticancer Drug*

Among the prominent nano-polymer drugs in Rexahn, RX-21101(HPMA-docetaxel) is an anticancer drug that can overcome the downside of cytotoxic compounds, such as poor solubility, stability, and severe adverse reactions. Conjugating water-soluble and non-toxic HPMA to conventional anticancer compounds bolster efficacy while lowering toxicity by specific tumor targeting and increased stability in body.

**Competition**

We are developing new drugs to address unmet medical needs in oncology, and to a lesser extent, CNS disorders, and sexual dysfunction markets. Our drug candidates will be competing with products and therapies that either currently exist or are expected to be developed. Competition among these products will be based on factors such as product efficacy, safety, price, launch timing and execution. Our competitive position will also depend upon our ability to attract and retain qualified personnel, to obtain patent protection or otherwise develop proprietary products or processes, and to secure sufficient capital resources for the often substantial period between technological conception and commercial sales.

There are a number of pharmaceutical and biotechnology companies, as well as academic institutions, government agencies and other public and private research organizations, which are conducting research and development on technologies and products for treatment of cancers, CNS diseases and sexual dysfunction. Our competitors may succeed in developing products based on novel

technologies that are more effective than ours, which could render our technology and products noncompetitive prior to recovery by us of expenses incurred with respect to those products. For many of the same reasons described above, we cannot assure you that we will compete successfully.

**Government Regulation**

Regulation by governmental authorities in the United States and in other countries constitutes a significant consideration in our product development, manufacturing and marketing strategies. We expect that all of our drug candidates will require regulatory approval by appropriate governmental agencies prior to commercialization and will be subjected to rigorous pre-clinical, clinical, and post-approval testing, as well as to other approval processes by the FDA and by similar health authorities in foreign countries. U.S. federal regulations control the ongoing safety, manufacture, storage, labeling, record keeping, and marketing of all biopharmaceutical products intended for therapeutic purposes. We believe that we are in compliance in all material respects with currently applicable rules and regulations.

Obtaining governmental approvals and maintaining ongoing compliance with federal regulations are expected to require the expenditure of significant financial and human resources not currently at our disposal. We plan to fulfill our short-term needs through consulting agreements and joint ventures with academic or corporate partners while building our own internal infrastructure for long-term corporate growth.

The process by which biopharmaceutical compounds for therapeutic use are approved for commercialization in the United States is lengthy. Many other countries have instituted an equally difficult approval processes. In the United States, regulations published by the FDA require that the person or entity sponsoring and/or conducting a clinical study for the purpose of investigating a potential biological drug product's safety and effectiveness submit an Investigational New Drug (IND) application to the FDA. These investigative studies are required for any drug product for which the product manufacturer intends to pursue licensing for marketing the product in interstate commerce. If the FDA does not object to the IND application, clinical testing of the compound may begin in humans after a 30-day review period. Clinical evaluations typically are performed in three phases.

In Phase I, the drug is administered to a small number of healthy human subjects or patients to confirm its safety and to develop detailed profiles of its pharmacological and pharmacokinetic actions (*i.e.*, absorption, metabolism, excretion, duration of therapeutic concentration and effects, if any).

In Phase II, the drug is administered to groups of patients (up to a total of 500) to determine its preliminary efficacy against the targeted disease and the requisite dose and dose intervals. In a typical development program, additional animal toxicology studies precede this phase. In some cases, the trial can be split into Phase IIa and IIb studies in order to test smaller subject pools. Some Phase I clinical studies may also proceed in parallel with some Phase II studies.

In Phase III, the drug is administered to a larger group of patients (usually 1,000 to 3,000 or more) by physicians (study site investigators) in a network of participating clinics and hospitals. The extensive clinical testing is intended to confirm Phase II results and to document the nature and incidence of adverse reactions. Studies also are performed in patients with concomitant diseases and medications. Larger patient populations are evaluated in Phase III at multiple study sites and many clinical trial programs or registration studies are conducted concurrently for the sake of time and efficiency.

After completing the clinical studies, the product developer submits the safety and effectiveness data generated by the studies to the FDA in the form of a New Drug Application (NDA) to market the product. It is the responsibility of the FDA to review the proposed product labeling, the pre-clinical

(animal and laboratory) data, the clinical data, the facilities utilized and the methodologies employed in the manufacture of the product to determine whether the product is safe and effective for its intended use.

Even after initial FDA approval has been obtained, further studies may be required to provide additional data on safety or to gain approval for expanded labeling or treatment indications. Also, the FDA may require post-marketing testing and surveillance programs to monitor the drug's effects. Side effects resulting from the use of drug products may prevent or limit the further marketing of the products.

For marketing outside the United States, we will be subject to foreign regulatory requirements governing human clinical trials and marketing approval for drugs. The requirements relating to the conduct of clinical trials, product licensing, pricing and reimbursement vary widely from country to country.

Certain drugs are eligible in the United States for designation by the FDA as "orphan" drugs if their use is intended to treat a disease that affects fewer than 200,000 persons in the U.S. or the disease affects more than 200,000 persons in the United States but there is no reasonable expectation that the cost of developing and marketing a drug will be recovered from the U.S. sales of such drug. In order for a sponsor to obtain orphan designation for a drug product, an application must be submitted for approval to the FDA's Office of Orphan Products Development. The approval of an application for orphan designation is based upon the information submitted by the sponsor. A drug that has obtained orphan designation is said to have "orphan status." The approval of an orphan designation request does not alter the standard regulatory requirements and process for obtaining marketing approval. Safety and efficacy of a compound must be established through adequate and well-controlled studies.

Orphan drugs may obtain FDA approval after successful Phase II trials, rather than after completion of Phase III trials, resulting in faster time-to-market for those drugs. If a sponsor obtains orphan drug designation for a particular compound and is the first to obtain FDA regulatory approval of that compound, then that sponsor is granted marketing exclusivity for a period of seven years.

**Sales and Marketing**

Rexahn plans to commercialize unique and differentiated drugs that are first-in-class or potential market leaders. We may develop cancer drugs for orphan indications initially, and then expand into more highly prevalent cancers. Currently, Archexin has Orphan drug designation for five cancer indications. For drugs that require larger pivotal trials and/or large sales force, Rexahn seeks alliances and corporate partnerships with larger pharmaceutical firms. We also seek acquisition or in-licensing candidates to strengthen our product pipeline.

**Research Technologies**

Our research technologies are focused on our proprietary multi-target aimed ligands platform and nano-based drug delivery. For a discussion of collaboration arrangements pursuant to which we obtain research and development services from universities, research institutions and other organizations, see "Collaboration and License Agreements" in this item.

***The Inhibitors of Multi-Expression Signals (TIMES)***

TIMES is Rexahn's unique ligand discovery platform targeting multi-expression signals. Since cancer is a complex disease caused by multiple factors as well as genetic modifications, cancer treatment involves a combination of drugs with different mechanisms of action, which compound degree and extent of toxicities. Rexahn's approach is to control multiple targets important for cancer proliferation with a single agent. In doing so, Rexahn utilizes a proprietary, genomics-based integrated, gene expression system to identify potentially important targets that control multiple genes or signaling events in cancer cells.

***3-D Gateway of Ligand Discovery (3-D GOLD)***

3D-GOLD is a drug discovery platform that integrates 3-D natures of molecular modeling, databases of chemicals and proteins, and ligand filtering and generation. The chemical database contains 3D structures of about 7 million compounds. Rexahn's proprietary quantitative structure-activity relationship tool for innovative discovery and docking tools are parts of the platform. The filtering module is a powerful component to determine similarity in pharmacophore and 3D fingerprinting, while ligand generation helps optimize the leads.

***Nano-medicine Drug Delivery***

Rexahn has developed unique proprietary drug delivery nano-systems that may increase the availability of a drug at the disease site, minimize adverse reactions, and/or provide longer duration of action. Rexahn is currently testing multiple nanoliposomal- and nanopolymer-based anticancer drugs.

**Manufacturing and Distribution**

We do not currently have the resources required for commercial manufacturing of our drug candidates. We currently outsource the manufacturing of drug substances and drug products for our drug candidates. We believe that there are a limited number of manufacturers that could manufacture our drug candidates. We have no current plans to build internal manufacturing capacity for any product. Manufacturing will be accomplished through outsourcing or through partnerships with large pharmaceutical companies. We do not have any specific distribution plans at this time.

**Intellectual Property**

Proprietary patent and intellectual property (IP) protection for our drug candidates, processes and know-how is important to our business. We aggressively prosecute and defend our patents and proprietary technology. Rexahn has several U.S. and international patents issued for broad IP coverage of our drug candidates in cancer, CNS, behavioral and mood disorders, neuroprotection and sexual dysfunction, effective until 2020 to 2030. In 2011, we were granted two US patents and two European patents for our oncology and CNS candidates. Additional U.S., Europe, and other foreign patents are pending. We also rely upon trade secrets, know-how, continuing technological innovation and licensing opportunities to develop and maintain our competitive position.

In particular, Rexahn owns US patents for its clinical and preclinical candidates related to RX-1792, RX-3117, Archexin, RX-0047 and RX-8243. In addition, Rexahn owns issued patents in multiple foreign countries related for RX-1792, RX-3117, Archexin, RX-0047 and RX-5902. Additional US and/or foreign patent applications related to RX-3117, RX-8243, RX-5902, RX-21101 and RX-21202 are pending. There are also issued patents and pending applications in US and foreign countries related to Zoraxel and Serdaxin.

In February 2005, we licensed-in CNS-related intellectual property from Revaax Pharmaceuticals, LLC. The intellectual property rights acquired cover use of certain compounds for anxiety, depression, aggression, cognition, Attention Deficit Hyperactivity Disorder, neuroprotection and sexual dysfunction. See "Collaboration and License Arrangements" in this Item for additional information.

Rexahn is the exclusive licensee of all four US and several foreign patents related to Serdaxin. Rexahn is the exclusive licensee of two issued US patents related to Zoraxel. Rexahn is also the exclusive licensee of additional pending US and/or foreign patent applications related to Zoraxel and/or Serdaxin. See “Collaboration and License Arrangements” in this Item for additional information.

**Collaboration and License Arrangements**

We have numerous collaborative research and development relationships with universities, research institutions and other organizations. A description of these material relationships is below.

**Teva Pharmaceutical Industries (Teva)**.

On September 21, 2009, we closed on licensing and stock purchase agreements with Teva for the development of our novel anti-cancer compound, RX-3117. RX-3117 is a small molecule, new chemical entity (NCE), nucleoside compound that has an anti-metabolite mechanism of action, and has therapeutic potential in a broad range of cancers including colon, lung and pancreatic cancer. The companies reached an agreement with respect to the commercialization and development of RX-3117, under which Teva purchased 3,102,837 shares of our common stock for $3.5 million. We will be eligible to receive additional development, regulatory and sales milestone payments. In addition, we will be eligible to receive royalties on net sales worldwide. On January 19, 2011, we entered into a second amendment to this agreement, where Teva purchased 2,334,515 shares of our common stock for $3.95 million. This second amendment also provided for a possible third investment by Teva, in the amount of $750,000.

**TheraTarget, Inc. (TheraTarget).**

On December 14, 2009, Rexahn and TheraTarget, a developer of innovative polymer therapeutics for the treatment of cancer, formed a joint research collaboration agreement. Under the terms of the agreement, TheraTarget will synthesize and supply us with polymer-drug conjugate products, which are part of our polymer-based nanomedicine portfolio.

**Korea Research Institute of Chemical Technology (KRICT)**

On July 13, 2009, we entered a licensing partnership with the Korea Research Institute of Chemical Technology (KRICT) to develop a synthetic process for Quinoxalines compounds. These compounds provide selective toxicity towards hypoxic cells – cells found in solid tumors and that are resistant to anticancer drugs and radiation therapy, making them a potential treatment for solid tumors.

**The University of Maryland Baltimore (UMB)**

On February 1, 2007, we entered into a Maryland Industrial Partnership Agreement with the UMB to collaborate with and sponsor the joint development of polymer-drug conjugates for cancer therapy, for the targeted delivery of cancer drugs. Intellectual property made or developed under this agreement is jointly owned by us and UMB.

**Revaax Pharmaceuticals LLC (Revaax)**

On February 10, 2005, we licensed on an exclusive basis, with the right to sublicense, all of the IP of Revaax, which includes four patents and multiple patent applications, with respect to certain chemical structures that have demonstrated in pre-clinical research the potential to treat certain behavioral disorders, such as anxiety, depression and cognitive disorders (the "Licensed Products"). This agreement expires upon the expiration of the royalty term for all Licensed Products in all countries, which is no earlier than August 2020 and could extend to August 2024. This agreement provides for an initial license fee and milestone payments based on the initiation of pivotal trials for disease treatment indication for licensed products.

This agreement provides for an initial license fee and milestone payments based on the initiation of pivotal trials for disease treatment indication for licensed products. Furthermore, we will pay Revaax a specified fee for each Licensed Product under the agreement upon receipt of the first approval by any federal, state or local regulatory, department, bureau or other governmental entity necessary prior to the commercial sale of the Licensed Product ("Marketing Approval"). Notwithstanding the milestone payment arrangement described above, we are not obligated to make any milestone payment with respect to milestone events for which we receive sublicense revenues and are obligated to pay Revaax a percentage of such sublicense revenues, as well as royalties for sales of Licensed Products based on net sales of the Licensed Products.

Under the agreement we agreed to pay Revaax an initial license fee of $375,000, payable in 8 installments of $46,875 each over a period of 2 years from February 10, 2005. In addition, we also agreed to pay Revaax a number of one time payments within 30 days of the first achievement of the following milestones, (a) $500,000 with respect to the dosing of the first patient in the first Phase III clinical trial or other controlled study in humans of the efficacy and safety with regards to any product the manufacture, use or sale of which is covered by a any claim of an issued and unexpired patent (the "Pivotal Trial") within the Licensed Products, and $250,000 with respect to the dosing of the first patient, in the second, third, fourth and fifth Privotal Trial, and $125,000 with respect to the dosing of the first patient in any subsequent Pivotal Trial, (b) $5,000,000 with respect to the receipt of Marketing Approval, and $2,500,000 with respect to the receipt of the second, third, fourth and fifth Marketing Approval for a Licensed Product, and $1,250,000 with respect to any subsequent Marketing Approval. We are not under an obligation to make any payments with respect to milestone events for which we receive any non-creditable upfront fees or milestone payments received by us from any sublicense in connection with the development and commercialization of a Licensed Product by such sublicense, less any license fees, milestone payments, or royalties payable by us to a third party under any technology acquisition agreement in connection with the development or commercialization of a Licensed Product, but specifically excluding any royalties revenues derived from any sublicense agreements. Also, at our option, we may elect to make up to 50% of any milestone payment in shares of our common stock with the number of shares determined by dividing the amount of the milestone portion by the fair market value of one share of common stock, as reasonably determined by our board of directors.

We also agreed to pay Revaax royalty payments on all sales of the Licensed Product made to third parties. The royalties consist of (a) 4% of the portion of the aggregate net sales of the Licensed Product during a calendar year that is equal to or less than $250,000,000, (b) 5% of the portion of aggregate net sales of the Licensed Product in a calendar year that is greater than $250,000,000 but equal to or less than $500,000,000, (c) 6% of the aggregate sales of the Licensed Product during a calendar year that is greater than $500,000,000 but equal to or less than $750,000,000, and (d) 7% of the aggregate net sales of the Licensed Product during a calendar year exceeds $750,000,000. The royalty payment obligations will expire on the later of (a) expiration of any claim of an issued and unexpired patent within the Licensed Products which has not been held unenforceable or invalid and which has not been

disclaimed or admitted to be invalid or unenforceable through reissue or otherwise (the "Valid Claim") that, for the licenses granted under the Agreement, would be infringed by the sale of such Licensed Product, and (b) 10 years after the first commercial sale of the Licensed Product by us, our affiliates or sublicenses anywhere in the world.

Upon expiration of the Valid Claim for a particular Licensed Product in a particular country, each of the royalty fees will be reduced by 50% for the remainder of the term remaining on our royalty payment obligations, resulting in royalty fees of 2%, 2.5%, 3%, and 3.5%, as applicable.

**Rexgene Biotech Co., Ltd. (Rexgene)**

On February 6, 2003 we entered into a Research Collaboration Agreement with Rexgene to collaborate in the development of a cancer treatment therapeutic compound denominated RX-0201(Archexin). We jointly agreed to develop a research and development plan for the purpose of registering Archexin for sale and use in the Republic of Korea and other Asian countries. The research and development plan would include clinical and animal trials to be conducted in the United States, clinical trials would be conducted in Korea and other Asian countries. We agreed to provide as its initial contribution to the joint development and research, a license to all technology related to Archexin. Rexgene agreed to provide, as its initial contribution $1,500,000 to be used by us in further development of Archexin. Rexgene agreed to pay us a royalty fee of 3% of net sales of licensed products related to Archexin in all countries in Asia by Rexgene or any sublicensee of Rexgene.

The agreement was scheduled to expire upon the last to expire of all US and foreign patents presently or in the future issued that cover Archexin, or if no licensed patent is issued within 20 years from the date of execution of the agreement. A breach of the agreement by either party will afford the non-breaching party the right to terminate the agreement upon 90 days written notice of termination specifying the obligations breached, provided that within said 90 days the breaching party does not remedy the breach.

**Total Research and Development Costs**

We have incurred research and development costs of $11,992,087, $3,934,701 and $3,176,971 for the years ended December 31, 2011, 2010 and 2009 respectively. Research and development costs primarily consist of clinical trials and preclinical development costs, as well as payroll costs for research and development personnel.

**Employees**

We currently have 15 full-time employees, all of whom are based either at our Rockville, Maryland office or our Germantown, Maryland lab facility. Our employees are not covered by any collective bargaining agreement and we have never experienced a work stoppage. We believe our relationships with our employees are satisfactory.

**Available Information**

Under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), the Company is required to file annual, quarterly and current reports, proxy statements and other information with the Securities and Exchange Commission (the "SEC"). Any document the Company files with the SEC may be read and copied at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at (800) SEC-0330 for further information about the public reference room. The SEC maintains a

website at www.sec.gov that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC.

The Company makes available, free of charge, on its website at www.rexahn.com its Annual Report on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, and all amendments thereto, as soon as reasonably practicable after the Company files such reports with, or furnishes them to, the SEC. Investors are encouraged to access these reports and the other information about the Company's business on its website. Information found on the Company's website is not part of this Annual Report on Form 10-K. The Company will also provide copies of its Annual Report on Form 10-K, free of charge, upon written request of the Investor Relations Department at the Company's main address, 15245 Shady Grove Road, Suite 455, Rockville MD 20850

Also posted on the Company's website, and available in print upon written request of any shareholder to the Company's Investor Relations Department, are the charters of the standing committees of its Boar

**Item 1A. Risk Factors.**

*You should carefully consider the risks described below together with the other information included in this Form 10-K. Our business, financial condition or results of operations could be adversely affected by any of these risks. If any of these risks occur, the value of our common stock could decline.*

***We currently have no product revenues, have incurred negative cash flows from operations since inception, and will need to raise additional capital to operate our business.***

To date, we have generated no product revenues and have incurred negative cash flow from operations. Until we receive approval from the FDA and other regulatory authorities for our drug candidates, we cannot sell our drugs and will not have product revenues. Therefore, for the foreseeable future, we will have to fund all of our operations and capital expenditures from the net proceeds of equity or debt offerings we may make, cash on hand, licensing fees and grants. We will need to raise additional money through debt and/or equity offerings in order to continue to develop our drug candidates. If we are not able to raise sufficient additional money, we will have to reduce our research and development activities. We will first reduce research and development activities associated with our preclinical compounds. To the extent necessary, we will then reduce our research and development activities related to some or all of our clinical drugs.

Additionally, changes may occur that would consume our existing capital at a faster rate than projected, including but not limited to, the progress of our research and development efforts, the cost and timing of regulatory approvals and the costs of protecting our intellectual property rights. We may seek additional financing to implement and fund other drug candidate development, clinical trial and research and development efforts, including Phase I clinical trials for other new drug candidates, as well as other research and development projects.

We will need additional financing to continue to develop our drug candidates, which may not be available on favorable terms, if at all. If we are unable to secure additional financing in the future on acceptable terms, or at all, we may be unable to complete our planned pre-clinical and clinical trials or obtain approval of our drug candidates from the FDA and other regulatory authorities. In addition, we may be forced to reduce or discontinue product development or product licensing, reduce or forego sales and marketing efforts and forego attractive business opportunities in order to improve our liquidity to enable us to continue operations. Any additional sources of financing will likely involve the sale of our equity securities or securities convertible into our equity securities, which may have a dilutive effect on our stockholders.

***We are not currently profitable and may never become profitable.***

We have generated no revenues to date from product sales. Our accumulated deficit as of December 31, 2011 and 2010 was $57,084,613 and $45,739,663, respectively. For the years ended December 31, 2011, 2010 and 2009, we had net losses of $11,344,950, $14,022,107 and $2,903,098, respectively, partially as a result of expenses incurred through a combination of research and development activities related to the various technologies under our control and expenses supporting those activities. Even if we succeed in developing and commercializing one or more of our drug candidates, we expect to incur substantial losses for the foreseeable future and may never become profitable. We also expect to continue to incur significant operating and capital expenditures and anticipate that our expenses will increase substantially in the foreseeable future, based on the following considerations:

- continued pre-clinical development and clinical trials for our current and new drug candidates;
- efforts to seek regulatory approvals for our drug candidates;
- implementing additional internal systems and infrastructure;
- licensing in additional technologies to develop; and
- hiring additional personnel.

We also expect to continue to experience negative cash flow for the foreseeable future as we fund our operations and capital expenditures. Until we have the capacity to generate revenues, we are relying upon outside funding resources to fund our cash flow requirements.

***We have a limited operating history.***

We are a development-stage company with a limited number of drug candidates. To date, we have not demonstrated an ability to perform the functions necessary for the successful commercialization of any of our drug candidates. The successful commercialization of our drug candidates will require us to perform a variety of functions, including, but not limited to:

- conducting pre-clinical and clinical trials;
- participating in regulatory approval processes;
- formulating and manufacturing products; and
- conducting sales and marketing activities.

To date, our operations have been limited to organizing and staffing our company, acquiring, developing and securing our proprietary technology, drug candidate research and development and undertaking, through third parties, pre-clinical trials and clinical trials of our principal drug candidates. These operations provide a limited basis for assessment of our ability to commercialize drug candidates.

***We may not obtain the necessary U.S. or worldwide regulatory approvals to commercialize our drug candidates, and we cannot guarantee how long it will take for FDA to review applications for our drug candidates.***

We will need FDA approval to commercialize our drug candidates in the U.S. and approvals from the FDA-equivalent regulatory authorities in foreign jurisdictions to commercialize our drug candidates in those jurisdictions. In order to obtain FDA approval of our drug candidates, we must submit to the FDA an NDA demonstrating that the drug candidate is safe for humans and effective for its intended use. This demonstration requires significant research and animal tests, which are referred to as pre-clinical studies, as well as human tests, which are referred to as clinical trials. Satisfaction of the FDA's regulatory requirements typically takes many years, and depends upon the type, complexity and novelty of the drug candidate and requires substantial resources for research, development and testing. We cannot guarantee that any of our drug candidates will ultimately be approved by the FDA, if they will ultimately be reviewed on an expedited or priority basis by the FDA, or if an expedited or priority review will significantly shorten actual FDA review time. We cannot predict whether our research and clinical approaches will result in drugs that the FDA considers safe for humans and effective for indicated uses. Two of our drug candidates, Archexin and RX-0047, are antisense oligonucleotide (ASO) compounds. To date, although applications have been made by other companies, the FDA has not approved any NDAs for any ASO compounds for cancer treatment. In addition, each of Archexin, RX-0201-nano and RX-0047-nano is of a drug class (Akt inhibitor, in the case of Archexin and RX-0201-nano, and HIF inhibitor, in the case of RX-0047) that has not been approved by the FDA to date, nor have we submitted such NDA. After the clinical trials are completed, the FDA has substantial discretion in the drug approval process and may require us to conduct additional pre-clinical and clinical testing or to perform post-marketing studies.

In foreign jurisdictions, we must receive approval from the appropriate regulatory authorities before we can commercialize our drugs. Foreign regulatory approval processes generally include all of the risks associated with the FDA approval procedures described above. We cannot assure you that we will receive the approvals necessary to commercialize our drug candidates for sale outside the United States.

***There is no assurance as to the precise scope of our marketing exclusivity afforded under the Orphan Drug Act.***

Even if we have orphan drug designation for a particular drug indication, we cannot guarantee that another company also holding orphan drug designation will not receive FDA approval for the same indication before we do. If that were to happen, our applications for that indication may not be approved until the competing company's seven-year period of exclusivity expired. Even if we are the first to obtain FDA approval for an orphan drug indication, there are certain circumstances under which a competing product may be approved for the same indication during our seven-year period of marketing exclusivity, such as if the later product is shown to be clinically superior to the orphan product. Further, the seven-year marketing exclusivity would not prevent other sponsors from obtaining approval of the same compound for other indications or the use of other types of drugs for the same use as the orphan drug.

***Our drug candidates are in the stages of clinical trials.***

Our drug candidates are in the stage of development and require extensive clinical testing, which are very expensive, time-consuming and difficult to design. Archexin, our oncology drug candidate, is currently in Phase IIa trials for pancreatic cancer. In November, 2011, we released results that the Phase IIb clinical study showed Serdaxin did not demonstrate efficacy compared to the placebo group as measured by MADRS. We completed our Phase IIa clinical trial for Zoraxel, and are evaluating how to proceed with the Phase IIb study.

***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 is also time-consuming. We estimate that clinical trials of our current drug candidates will take up to three 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, but not limited to:

- unforeseen safety issues;
- determination of dosing issues;
- lack of effectiveness during clinical trials;
- change in the standard of care of the indication being studied
- reliance on third party suppliers for the supply of drug candidate samples;
- slower than expected rates of patient recruitment;
- inability to monitor patients adequately during or after treatment;
- inability or unwillingness of medical investigators and institutional review boards to follow our clinical protocols; and
- lack of sufficient funding to finance the clinical trials.

We or the FDA may suspend 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 submissions or the conduct of these trials.

Additionally, we may have difficulty enrolling patients in our clinical trials. If we experience such difficulties, we may not be able to complete the clinical trial or we may experience significant delays in completing the clinical trial.

***If the results of our clinical trials fail to support our drug candidate claims, the completion of development of such drug candidate may be significantly delayed or we may be forced to abandon development altogether, which will significantly impair our ability to generate product revenues.***

Even if our clinical trials are completed as planned, we cannot be certain that our results will support our drug candidate claims. Success in pre-clinical testing and early clinical trials does not ensure that later clinical trials will be successful, and we cannot be sure that the results of later clinical trials will replicate the results of prior clinical trials and pre-clinical testing. The clinical trial process may fail to demonstrate that our drug candidates are safe for humans and effective for indicated uses. This failure would cause us to abandon a drug candidate and may delay development of other drug candidates. Any delay in, or termination of, our clinical trials will delay the filing of our NDAs with the FDA and, ultimately, delay our ability to commercialize our drug candidates and generate product revenues. In addition, our trial designs may involve a small patient population. Because of the small sample size, the results of early clinical trials may not be indicative of future results. In addition, standard of care treatments may change which would require additional studies to be done.

***The Phase IIb results of Serdaxin may negatively impact our business, and our ability to secure financing.***

In November, 2011, we released the results of our Serdaxin Phase IIb trial, which did not demonstrate Serdaxin's efficacy compared to the placebo measured by the MADRS scores. At this point, we have not made any determinations of Serdaxin's future paths or allocated resources to the further development of Serdaxin. These results may lead us to delay development of Serdaxin. If we are not able to secure additional financing, we may not be able to implement and fund the research and development.

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

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

- awareness of the drug's availability and benefits;
- 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 product relative to competing products;
- availability of reimbursement for our products from government or other healthcare payers;
- 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 drug candidates, if approved, to generate substantially all of our product revenues for the foreseeable future, the failure of any of these drugs to find market acceptance would harm our business and could require us to seek additional financing.

***Much of our drug development program depends upon third-party researchers, and the results of our clinical trials and such research activities are, to a limited extent, beyond our control.***

We depend upon independent investigators and collaborators, such as universities and medical institutions, to conduct our pre-clinical, toxicology studies, and clinical trials. This business practice is typical for the pharmaceutical industry and companies like us. For example, the Phase I clinical trials of Archexin were conducted at the Lombardi Comprehensive Cancer Center of Georgetown Medical Center and the University of Alabama at Birmingham, with the assistance of Amarex, LLC, a pharmaceutical clinical research service provider who is responsible for creating the reports that will be submitted to the FDA. We also relied on TherImmune Research Corporation (now named Bridge Global Pharmaceutical Services, Inc.), a discovery and pre-clinical service provider, to summarize Archexin's pre-clinical data. While we make every effort internally to oversee their work, 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 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 drugs, if any, may be delayed. The risk of completion or delay of these studies is not within our direct control and a program delay may occur due to circumstances outside our control. A delay in any of these programs may not necessarily have a direct impact on our daily operations. However, to the extent that a delay results in additional cost to us, a higher than expected expense may result. These collaborators may also have relationships with other commercial entities, some of which may compete with us. If our collaborators assist our competitors at our expense, our competitive position would be harmed.

***We rely exclusively on third parties to formulate and manufacture our drug candidates, which expose us to a number of risks that may delay development, regulatory approval and commercialization of our products or result in higher product costs.***

We have no experience in drug formulation or manufacturing. Internally, we lack the resources and expertise to formulate or manufacture our own drug candidates. Therefore, we rely on third party expertise to support us in this area. For example, we have entered into contracts with third-party manufacturers such as UPM Pharmaceuticals, Inc. to manufacture, supply, store and distribute supplies of our drug candidates for our clinical trials. If any of our drug candidates receive FDA approval, we will rely on these or other third-party contractors to manufacture our drugs. Our reliance on third-party manufacturers exposes us to the following potential 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, the production of our products after receipt of FDA approval, if any.

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

- Our 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 Agency (DEA), and corresponding state agencies to ensure strict compliance with good manufacturing practice and other government regulations and corresponding foreign standards. We do not have control over third-party manufacturers' compliance with these regulations and standards, but we may be ultimately responsible for any of their failures.

- 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 of formulation patents .

- A third party manufacturer may gain knowledge from working with us that could be used to supply one of our competitors with a product that competes with ours.

Each of these risks could delay our clinical trials, drug approval and commercialization and potentially result in higher costs and/or reduced revenues.

***Two of our clinical stage product candidates, Serdaxin and Zoraxel, are based on the same active ingredient, and if safety concerns arise with the active ingredient, then it may delay or prevent further development, regulatory approval or successful commercialization of both product candidates.***

Two of our clinical stage product candidates, Serdaxin and Zoraxel, contain the same active ingredient. If safety concerns arise or any other material adverse events occur involving the active ingredient, it may result in delays, prevent the further development or adversely impact our ability to obtain necessary FDA and other regulatory approvals and to successfully commercialize both of these product candidates. Any such delay or inability to further develop and commercialize one or both of Serdaxin and Zoraxel would harm our business and our prospects.

***Serdaxin and Zoraxel may be subject to early generic competition or early off-label use of the active ingredient shared by both clinical stage product candidates.***

Two of our clinical stage product candidates, Serdaxin and Zoraxel, are based upon the same active ingredient that has previously been approved by the FDA for use in combination with antibiotics. Because we do not have a patent that claims this active ingredient chemical structure and because we are not likely to be able to obtain new chemical entity market exclusivity for this active ingredient, we may be rapidly subject to early generic competition or early off-label use of the active ingredient, which may adversely impact our ability to successfully commercialize one or both of Serdaxin or Zoraxel and may harm our financial condition, results of operations and business.

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

We currently have no sales, marketing or distribution capabilities. While we intend to have a role in the commercialization of our products, we do not anticipate having the resources in the foreseeable future to develop global sales and marketing capabilities for all of our proposed products. Our future success depends, in part, on our ability to enter into and maintain collaborative relationships with other companies having sales, marketing and distribution capabilities, the collaborator's strategic interest in the products under development and such collaborator's ability to successfully market and sell any such products. To the extent that we decide not to, or are unable to, enter into collaborative arrangements with respect to the sales and marketing of our proposed products, significant capital expenditures, management resources and time will be required to establish and develop an in-house marketing and sales force with technical expertise. We cannot assure you 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, as well as the terms of our agreements with such third parties, which cannot be predicted at this early stage of our development. We cannot assure you that such efforts will be successful. In addition, we cannot assure you that we will be able to market and sell our products in the United States or overseas.

***Developments by competitors may render our products or technologies obsolete or non-competitive.***

We will compete against fully integrated pharmaceutical companies and smaller companies that are collaborating with larger pharmaceutical companies, such as Keryx Biopharmaceuticals, Genta Incorporated and Imclone Systems Incorporated, as well as academic institutions, government agencies and other public and private research organizations. 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 more experience in:

- developing drugs;
- undertaking pre-clinical testing and human clinical trials;
- obtaining FDA and other regulatory approvals of drugs;
- formulating and manufacturing drugs; and
- launching, marketing and selling drugs.

Large pharmaceutical companies such as Bristol-Myers Squibb, Eli-Lilly, Novartis, Pfizer and Glaxo-SmithKline currently sell both generic and proprietary compounds for the treatment of cancer, depression and erectile dysfunction. In addition, companies pursuing different but related fields represent substantial competition. Many of these organizations have substantially greater capital resources, larger research and development staff and facilities, longer drug development history in obtaining regulatory approvals and greater manufacturing and marketing capabilities than we do. These organizations also compete with us to attract qualified personnel, parties for acquisitions, joint ventures or other collaborations.

***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 and our business and competitive position would suffer.***

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. We have an active patent protection program that includes filing patent applications on new compounds to treat cancer and other conditions, formulations, delivery systems, and methods of making and using products, and prosecuting these patent applications in the United States and abroad. As patents issue, we also file continuation applications for some of them. Through these actions, we are building a patent portfolio of patents assigned to and licensed to the Company. Further, Rexahn is developing proprietary research and platforms to strengthen and expand our innovative pipelines. However, we cannot predict:

- the degree and range of protection any patents will afford us against competitors, including whether third parties find ways to invalidate or otherwise circumvent our licensed patents;
- if and when patents will issue in the United States or any other country;
- whether or not others will obtain patents claiming aspects similar to those covered by our licensed patents and patent applications;
- whether we will need to initiate litigation or administrative proceedings which may be costly whether we win or lose;
- whether our patents will be challenged by our competitors alleging that a patent is invalid or unenforceable and, if opposed or litigated, the outcome of any administrative or court action as to patent validity, enforceability, or scope;

- whether a competitor will develop a similar compound that is outside the scope of protection afforded by a patent or whether the patent scope is inherent in the claims modified due to interpretation of claim scope by a court;

- whether there were activities previously undertaken by a licensor that could limit the scope, validity, or enforceability of licensed patents and intellectual property;

- whether there will be challenges or litigation brought by a licensor alleging breach of a license agreement and its effect on our ability to practice particular technologies and the outcome of any such challenge or litigation; or

- whether a competitor will assert infringement of its patents or intellectual property, whether or not meritorious, and what the outcome of any related litigation or challenge may be.

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, we require all employees 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.

***If we infringe the rights of third parties we could be prevented from selling products and be forced to pay damages and defend against litigation.***

If our products, methods, processes and other technologies infringe the proprietary rights of other parties, we could incur substantial costs and may have to:

- obtain licenses, which may not be available on commercially reasonable terms, if at all;

- redesign our products or processes to avoid infringement;

- stop using the subject matter claimed in the patents held by others, which could cause us to lose the use of one or more of our drug candidates;

- pay damages; or

- defend litigation or administrative proceedings which may be costly whether we win or lose, and which could result in a substantial diversion of our management resources.

Although to date, we have not received any claims of infringement by any third parties, as our drug candidates move into clinical trials and commercialization, our public profile and that of our drug candidates may be raised and generate such claims.

***Our license agreement with Revaax may be terminated in the event we commit a material breach, the result of which would significantly harm our business prospects.***

Our license agreement with Revaax is subject to termination by Revaax if we materially breach our obligations under the agreement, including breaches with respect to certain installment payments and royalty payments, if such breaches are not cured within a 60-day period. The agreement also provides that it may be terminated if we become involved in a bankruptcy, insolvency or similar proceeding. If this license agreement is terminated, we will lose all of our rights to develop and commercialize the licensed compounds, including Serdaxin and Zoraxel, which would significantly harm our business and future prospects.

***If we are unable to successfully manage our growth, our business may be harmed.***

In addition to our own internally developed drug candidates, we proactively seek opportunities to license-in the compounds in oncology and other therapeutic areas that are strategic and have value creating potential to take advantage of our development know-how. We are actively pursuing additional drug candidates to acquire for development. Such additional drug candidates 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 drug candidates. Alternatively, we may be required to hire more employees, further increasing the size of our organization and related expenses. If we are unable to manage our growth effectively, we may not efficiently use our resources, which may delay the development of our drug candidates and negatively impact our business, results of operations and financial condition.

***We may not be able to attract and retain qualified personnel necessary for the development and commercialization of our drug candidates. Our success may be negatively impacted if key personnel leave.***

Attracting and retaining qualified personnel will be critical to our future success. We compete for qualified individuals with numerous biopharmaceutical companies, universities and other research institutions. Competition for such individuals is intense, and we cannot assure you that we will be successful.

The loss of the technical knowledge and management and industry expertise of any of our key personnel, especially Dr. Chang H. Ahn, our Chairman, Chief Executive Officer, Chief Science Officer and regulatory expert, could result in delays in product development and diversion of management resources, which could adversely affect our operating results. Dr. Ahn plans to step down as Chief Executive Officer, but will remain with the Company as our Chief Science Officer. We are currently searching for a new CEO. We do not have “key person” life insurance policies for any of our officers.

***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. Our inability to obtain sufficient product liability insurance at an acceptable cost to protect against potential product liability claims could prevent or inhibit the commercialization of pharmaceutical products we develop, alone or with collaborators. Although we currently carry clinical trial insurance and product liability insurance we, or any collaborators, may not be able to maintain such insurance at a reasonable cost. Even if our agreements with any future collaborators entitles us to indemnification against losses, such indemnification may not be available or adequate should any claim arise.

***An investment in shares of our common stock is very speculative and involves a very high degree of risk.***

To date, we have generated no revenues from product sales and only minimal revenues from interest on bank account balances and short-term investments. Our accumulated deficit as of December 31, 2011 and 2010 was $57,084,613 and $45,739,663, respectively. For the years ended December 31, 2011, 2010 and 2009, we had net losses of $11,344,950, $14,022,107 and $2,903,098, respectively, partially as a result of expenses incurred through a combination of research and development activities related to the various technologies under our control and expenses supporting those activities. Until we receive approval from the FDA and other regulatory authorities for our drug candidates, we cannot sell our drugs and will not have product revenues.

***The market price of our common stock may fluctuate significantly.***

The market price of our common stock may fluctuate significantly in response to factors, some of which are beyond our control, such as:

- the announcement of new products or product enhancements by us or our competitors;
- changes in our relationships with our licensors or other strategic partners;
- developments concerning intellectual property rights and regulatory approvals;
- variations in our and our competitors' results of operations;
- changes in earnings estimates or recommendations by securities analysts; and
- developments in the biotechnology industry.

Further, the stock market, in general, and the market for biotechnology companies, in particular, have experienced extreme price and volume fluctuations. Continued market fluctuations could result in extreme volatility in the price of our common stock, which could cause a decline in the value of our common stock. You should also be aware that price volatility might be worse if the trading volume of our common stock is low. We have not declared or paid, and do not expect to declare or pay, any cash dividends on our common stock because we anticipate that any earnings generated from future operations will be used to finance our operations and as a result, you will not realize any income from an investment in our common stock until and unless you sell your shares at a profit.

Some or all of the "restricted" shares of our common stock issued in the merger of CPRD and Rexahn, Corp or held by other stockholders may be offered from time to time in the open market pursuant to Rule 144, and these sales may have a depressive effect on the market for our common stock. In general, an affiliated person who has held restricted shares for a period of six months may, upon filing with the SEC a notification on Form 144, sell into the market common stock in an amount equal to 1 percent of the outstanding shares (approximately 700,000 shares) during a three-month period. Non-affiliates may sell restricted securities after six months without any limits on volume.

***Our common stock is currently listed on the NYSE AMEX under the trading symbol "RNN". However, because our common stock may be a "penny stock," it may be more difficult for you to sell shares of our common stock, and the market price of our common stock may be adversely affected.***

Our common stock may be a "penny stock" if, among other things, the stock price is below $5.00

per share, we are not listed on a national securities exchange or approved for quotation on the Nasdaq Stock Market, or we have not met certain net tangible asset or average revenue requirements. Broker-dealers who sell penny stocks must provide purchasers of these stocks with a standardized risk-disclosure document prepared by the SEC. This document provides information about penny stocks and the nature and level of risks involved in investing in the penny-stock market. A broker must also give a purchaser, orally or in writing, bid and offer quotations and information regarding broker and salesperson compensation, make a written determination that transactions in penny stock are suitable for the purchaser, and obtain the purchaser's written agreement to the purchase. Broker-dealers must also provide customers that hold penny stock in their accounts with such broker-dealer a periodic statement containing price and market information relating to the penny stock. If a penny stock is sold in violation of the penny stock rules, purchasers may be able to cancel their purchase and get their money back. If applicable, the penny stock rules may make it difficult for investors to sell their shares of our stock. Because of the rules and restrictions applicable to a penny stock, there is less trading in penny stocks and the market price of our common stock may be adversely affected. Also, many brokers choose not to participate in penny stock transactions. Accordingly, purchasers may not always be able to resell shares of our common stock publicly at times and prices that they feel are appropriate.

***We may require additional capital funding the receipt of which may impair the value of our common stock.***

If we expand more rapidly than currently anticipated or if our working capital needs exceed our current expectations, we may need to raise additional capital through public or private equity offerings or debt financings. Our future capital requirements depend on many factors including our research, development, sales and marketing activities. We do not know whether additional financing will be available when needed, or will be available on terms favorable to us. If we cannot raise needed funds on acceptable terms, we may not be able to develop or enhance our products, take advantage of future opportunities or respond to competitive pressures or unanticipated requirements. To the extent we raise additional capital by issuing equity securities, our stockholders may experience substantial dilution and the new equity securities may have greater rights, preferences or privileges than our existing common stock.

***We have not paid dividends to our stockholders in the past, and we do not anticipate paying dividends to our stockholders in the foreseeable future.***

We have not declared or paid cash dividends on our common stock. We currently intend to retain all future earnings, if any, to fund the operation of our business, and therefore we do not anticipate paying dividends on our common stock in the foreseeable future.

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

None

**Item 2. Description of Property.**

We lease approximately 5,466 square feet of office space at 15245 Shady Grove Road, Rockville, Maryland 20850. We also lease approximately 1,100 square feet of laboratory space at 20271 Goldenrod Lane 2086, #2088, Germantown, MD 20876. The facility is equipped with the requisite laboratory services required to conduct our business and we believe that our existing facilities are adequate to meet our needs for the foreseeable future. The office lease, which commenced on June 29, 2009, is for a five

year term. The laboratory lease, which commenced on July 1, 2009, is for one year term and was renewed for additional years commencing July 1, 2010 and July 1, 2011. We do not own any real property.

**Item 3. Legal Proceedings**.

None

**Item 4. Mine Safety Disclosures**

Not Applicable

## PART II

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

As of March 15, 2012, we are authorized to issue two classes of capital stock, which are common stock and preferred stock. Our total authorized shares of common stock and preferred stock are 500,000,000 shares, par value $0.0001 per share, and 100,000,000 shares, par value $0.0001, respectively. As of March 15, 2012, we have 95,345,656 shares of common stock outstanding and approximately 8000 stockholders of record of common stock. As of March 15, 2012, no shares of preferred stock are outstanding.

Our common stock is traded on the NYSE AMEX, formerly known as the American Stock Exchange, under the ticker symbol "RNN." From May 16, 2005 to May 23, 2008 our common stock was traded on the Over the Counter Bulletin Board (the OTC-BB) under the ticker symbol "RXHN." From November 2004 until May 13, 2005, our common stock was traded on the OTC-BB under the ticker symbol "CPRD."

The following table sets forth the high and low sales prices of our common shares as reported during the periods indicated.

| Period | High | Low |
|---|---|---|
| 2010 | | |
| First Quarter | 1.65 | 0.66 |
| Second Quarter | 3.65 | 1.12 |
| Third Quarter | 1.49 | 1.13 |
| Fourth Quarter | 1.24 | 0.98 |
| 2011 | | |
| First Quarter | 1.84 | 1.07 |
| Second Quarter | 1.39 | 1.15 |
| Third Quarter | 1.27 | 0.91 |
| Fourth Quarter | 1.16 | 0.35 |

***Dividends***

We have not paid any cash dividends on common stock and do not expect to do so in the foreseeable future. We anticipate that any earnings generated from future operations will be used to finance our operations. No restrictions exist upon our ability to pay dividends.

***Purchase of Equity Securities by the Issuer and Affiliated Purchasers***

There were no repurchases of equity securities in 2011.

***Sale of Unregistered Equity Securities***

On January 19, 2011, the Company completed a sale of 2,334,515 shares of the Company's common stock to Teva for an aggregate purchase price of $3,950,000. This investment by Teva was made pursuant to the securities purchase agreement, as amended by the Second Amendment, whereby

Teva had the option to make an additional investment in the Company's common stock for the purpose of supporting the research and development program for the pre-clinical stage, anti-cancer compound RX-3117. This per share price of the Company's common stock purchased by Teva was determined pursuant to the securities purchase agreement, as amended by the Second Amendment, which provided for a per share price of 120% above the closing price on January 5, 2011. The securities were issued pursuant to the exemption from the registration requirements of the Securities Act of 1933, as amended, afforded by Section 4(2) thereof, as a transaction to an accredited investor not involving a public offering.

Pursuant to a consulting agreement, dated as of February 12, 2010, by and between JFS Investments and the Company, the Company issued an aggregate of 1,020,000 shares of common stock to JFS Investments. The shares of common stock were issued in consideration for investor relation services provided by JFS Investments. The shares of common stock were not registered under the Securities Exchange Act of 1933, as amended (the "Securities Act") pursuant to the exemptions from the registration requirements provided by Section 4(2) of the Securities Act. The Company delivered a notice to JFS Investments terminating the consulting agreement on November 12, 2010.

Pursuant to a consulting agreement, dated as of February 12, 2010, by and between Garden State Securities, Inc. and the Company, the Company issued an aggregate of 680,000 shares of common stock to Garden State Securities, Inc. The shares of common stock were issued in consideration for investor relation services provided by Garden State Securities Inc. The shares of common stock were not registered under the Securities Exchange Act of 1933, as amended (the "Securities Act") pursuant to the exemptions from the registration requirements provided by Section 4(2) of the Securities Act. The Company delivered a notice Garden State Securities, Inc. terminating the consulting agreement on November 12, 2010.

On September 21, 2009, the Company completed a sale of 3,102,837 shares of our common stock, par value $0.0001 per share, to Teva, for an aggregate purchase price of $3,500,000. The securities were issued pursuant to the exemption from registration afforded by Section 4(2) of the Securities Act of 1933. The purchaser is an accredited investor and represented that it was acquiring the securities for investment only and not with a view for the sale or distribution of the securities.

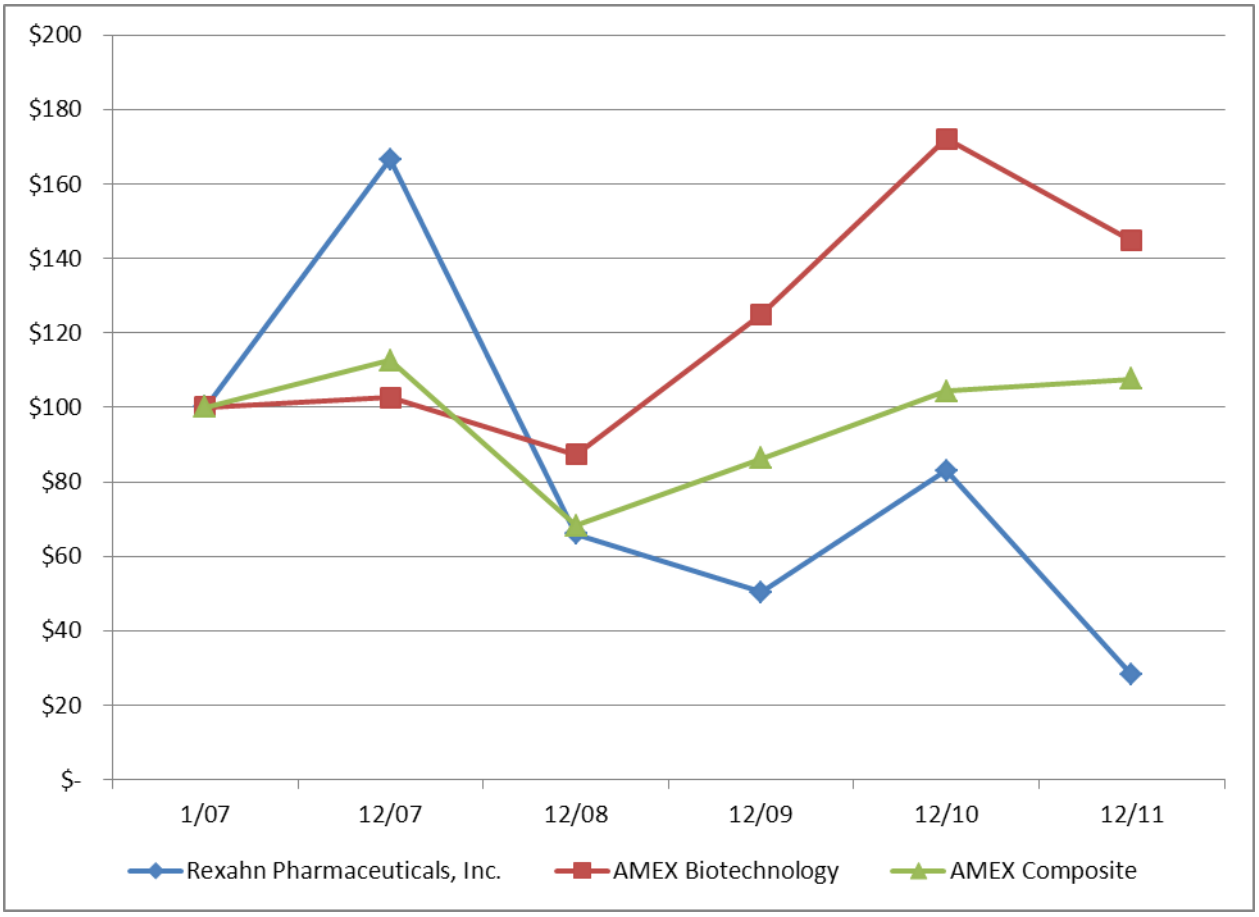
***Equity Compensation Plan Information***

The following table provides information, as of December 31, 2011, about shares of our common stock that may be issued upon the exercise of options, warrants and rights granted to employees, consultants or directors under all of our existing equity compensation plans.

| | **Number of securities to be issued upon exercise of outstanding options, warrants and rights** | **Weighted average exercise price of outstanding options, warrants and rights** | **Number of securities remaining available for future issuance under equity compensation plans** |
|---|---|---|---|
| **Equity compensation plans approved by stockholders** | **7,646,795** | **$1.05** | **8,673,000** |
| **Equity compensation plans not approved by stockholders** | **–** | **–** | **–** |
| **Total** | **7,646,795** | **$1.05** | **8,673,000** |

***Performance Graph***

The following graph compares the cumulative total stockholder return on $100 of our common stock for the period beginning January 1, 2007 through December 31, 2011, with the cumulative total return over such period for an identical investment on i) the American Stock Exchange Composite Index and ii) the American Stock Exchange Biotechnology Index



**Item 6. Selected Financial Data.**

| | For the Year Ended December 31, | | | | |
|---|---|---|---|---|---|
| | 2011 | 2010 | 2009 | 2008 | 2007 |
| **Statement of Operations Data:** | | | | | |
| Revenue | $ - | $ - | $ - | $ - | $ - |
| Operating Expenses | 16,131,013 | 10,305,909 | 6,465,898 | 5,152,315 | 4,432,149 |
| Net Loss | (11,344,950) | (14,022,107) | (2,903,098) | (3,681,801) | (4,442,331) |
| Basic and Diluted Loss per Share | $ (0.12) | $ (0.18) | $ (0.05) | $ (0.07) | $ (0.09) |
| Weighted Average shares outstanding, basic and diluted | 93,048,490 | 78,662,495 | 61,411,442 | 55,856,991 | 50,332,642 |

| | As of December 31, | | | | |
|---|---|---|---|---|---|
| | 2011 | 2010 | 2009 | 2008 | 2007 |
| **Balance Sheet Data:** | | | | | |
| Cash, Cash Equivalents, Restricted Cash and Marketable Securities | $ 13,243,253 | $ 15,193,752 | $ 9,499,092 | $ 3,368,880 | $ 7,359,571 |
| Total Assets | $ 13,689,648 | $ 16,216,184 | $ 9,989,005 | $ 4,113,989 | $ 8,483,670 |
| Current Liabilities | 1,185,405 | 1,820,900 | 785,904 | 358,894 | 606,832 |
| Accumulated Deficit | (57,084,613) | (45,739,663) | (31,717,556) | (28,814,458) | (24,132,657) |
| Total Stockholders' Equity (Deficit) | $ 10,706,130 | $ 10,395,457 | $ 4,902,411 | $(2,602,689) | $ 958,193 |
| Common shares outstanding | 95,345,656 | 84,160,849 | 71,938,701 | 56,025,649 | 55,292,791 |

Net Loss, Basic and Diluted Loss per share, Accumulated Deficit, and Total Stockholders' Equity (Deficit) as of and for the years ended December 31, 2008 and 2007 have been restated as discussed in Footnote 2 of Item 8 of this Form 10-K.

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

*You should read the following discussion and analysis of our results of operations, financial condition and liquidity in conjunction with our financial statements and the related notes, which are included in this Annual Report on Form 10-K. Some of the information contained in this discussion and analysis or set forth elsewhere in this Annual Report on Form 10-K, including information with respect to our plans and strategies for our business, statements regarding the industry outlook, our expectations regarding the future performance of our business, and the other non-historical statements contained herein are forward-looking statements. See "Cautionary Statement Regarding Forward-Looking Statements." You should also review the "Risk Factors" section under this Item 1A of this Annual Report for a discussion of important factors that could cause actual results to differ materially from the results described herein or implied by such forward-looking statements.*

**Overview**

Our company resulted from the merger of Corporate Road Show.Com Inc., a New York corporation incorporated in November 1999, ("CPRD") and Rexahn, Corp, a Maryland corporation, immediately after giving effect to our reincorporation as a Delaware corporation under the name "Rexahn Pharmaceuticals, Inc." In connection with that transaction, a wholly owned subsidiary of ours merged with and into Rexahn, Corp, with Rexahn, Corp remaining as the surviving corporation and a wholly owned subsidiary of ours. In exchange for their shares of capital stock in Rexahn, Corp, the former stockholders of Rexahn, Corp received shares of common stock representing approximately 91.8% of the Company's outstanding equity after giving effect to the transaction. Further, upon the effective time of the Merger, our historic business was abandoned and the business plan of Rexahn, Corp was adopted. The transaction was therefore accounted for as a reverse acquisition with Rexahn, Corp as the accounting acquiring party and CPRD as the acquired party. In September 2005, Rexahn, Corp was merged with and into the Company.

Our efforts and resources have been focused primarily on acquiring and developing our pharmaceutical technologies, raising capital and recruiting personnel. We are a development stage company and have no product sales to date and we will not receive any product sales until we receive approval from the FDA or equivalent foreign regulatory bodies to begin selling our pharmaceutical candidates. Our major sources of working capital have been proceeds from various private financings, primarily private sales of common stock and debt securities, and collaboration agreements with our strategic investors.

**Critical Accounting Policies**

A "critical accounting policy" is one which is both important to the portrayal of our financial condition and results and requires our management's most difficult, subjective or complex judgments, often as a result of the need to make estimates about the effect of matters that are inherently uncertain. Our accounting policies are in accordance with United States generally accepted accounting principles, or GAAP, and their basis of application is consistent with that of the previous year. Our significant estimates include assumptions made in estimating the fair values of stock-based compensation and our assessment relating to the impairment of intangible assets and deferred revenues.

**Research and Development**

Research and development costs are expensed as incurred. Research and development expenses consist primarily of third party service costs under research and development agreements, salaries and

related personnel costs, as well as stock compensation related to these costs, costs to acquire pharmaceutical products and product rights for development and amounts paid to contract research organizations, hospitals and laboratories for the provision of services and materials for drug development and clinical trials.

Costs incurred in obtaining the license rights to technology in the research and development stage that have no alternative future uses and are for unapproved product compounds are expensed as incurred.

**Fair Value of Financial Instruments**

The carrying amounts reported in the accompanying financial statements for cash and cash equivalents, prepaid expenses and other current assets and accounts payable and accrued expenses approximate fair value because of the short-term maturity of these financial instruments. The fair value methodology for our warrant liabilities and put feature on common stock is described in detail in Item 8 of this Form 10-K.

**Income Taxes**

The Company accounts for income taxes in accordance with ASC 740, "Income Taxes." Deferred tax assets and liabilities are recorded for differences between the financial statement and tax basis of the assets and liabilities that will result in taxable or deductible amounts in the future based on enacted tax laws and rates. ASC 740 requires that a valuation allowance be established when it is more likely than not that all portions of a deferred tax asset will not be realized. A review of all positive and negative evidence needs to be considered, including a company's current and past performance, the market environment in which the company operates, length of carryback and carryforward periods and existing contracts that will result in future profits. Income tax expense is recorded for the amount of income tax payable or refundable for the period, increased or decreased by the change in deferred tax assets and liabilities during the period.

As a result of the Company's significant cumulative losses, we determined that it was appropriate to establish a valuation allowance for the full amount of our deferred tax assets.

The calculation of our tax liabilities involves the inherent uncertainty associated with the application of complex tax laws. We are subject to examination by various taxing authorities. We believe that as a result of our losses sustained to date, any examination would result in a reduction of our net operating loss carryforward rather than a tax liability. As such, we have not provided for additional taxes estimated under ASC 740.

**Warrant Liabilities**

In accordance with ASC 480, "Distinguishing Liabilities from Equity," we record warrant liabilities at fair value due to provisions in our warrant agreements, as discussed in Footnote 13 of Item 8 of this Form 10-K. We reevaluate the fair value of our warrants at each reporting period, and changes in the fair value between reporting periods is recorded as "unrealized gain (loss) on fair value of warrants" in the statement of operations.

**Put Feature on Common Stock**

We extended anti-dilution protection provisions on our common stock to our investors in our December 2007 and March 2008 financings, whereby in the event that we sell or issue shares below the effective purchase price paid, the investors would thereupon receive additional shares in a ratio outlined in the Securities Purchase Agreement. In accordance with ASC Topic 480, "Distinguishing Liabilities from Equity", this feature is a written put on our common stock, and is classified as a liability at fair

value. We reevaluate the fair value at each reporting period, and changes in the fair value are recorded as "unrealized gain on put feature on common stock in the statement of operations.

**Stock-Based Compensation**

In accordance with ASC 718, "Stock Compensation" compensation costs related to share-based payment transactions, including employee stock options, are to be recognized in the financial statements. In addition, the Company adheres to the guidance set forth within Securities and Exchange Commission (SEC) Staff Accounting Bulletin No. 107 (SAB 107), which provides the Staff's views regarding the interaction between ASC 718 and certain SEC rules and regulations, and provides interpretations with respect to the valuation of share-based payments for public companies.

**Impairment of Long-Lived Assets**

In accordance with ASC 360, "Property, Plant and Equipment," long-lived assets to be held and used are analyzed for impairment whenever events or changes in circumstances indicate that the related carrying amounts may not be recoverable. The Company evaluates at each balance sheet date whether events and circumstances have occurred that indicate possible impairment. If there are indications of impairment, the Company uses future undiscounted cash flows of the related asset or asset grouping over the remaining life in measuring whether the assets are recoverable. In the event such cash flows are not expected to be sufficient to recover the recorded asset values, the assets are written down to their estimated fair value. Management determined that an impairment of intangible assets occurred in 2009 and wrote-off the assets remaining carrying value of $286,132.

**Concentration of Credit Risk**

ASC 825, "Financial Instruments," requires disclosure of any significant off-balance sheet risk and credit risk concentration. The Company does not have significant off-balance sheet risk or credit concentration. The Company maintains cash and short-term investments with major financial institutions. From time to time the Company has funds on deposit with commercial banks that exceed federally insured limits. The balances are insured by the Federal Deposit Insurance Corporation up to $250,000. At December 31, 2011, the Company's uninsured cash balances was $10,543,447. Management does not consider this to be a significant credit risk as the banks are large, established financial institutions.

**Recent Accounting Pronouncements Affecting the Company**

*Fair Value Measurements*

In May 2011, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update 2011-04 to Accounting Standards Codification ("ASC") 820, "Fair Value Measurements and Disclosures" ("ASC 820") which amends the disclosure requirements for fair value instruments. The new disclosures required include disclosure regarding the sensitivity of the fair value measurement to changes in unobservable inputs, and the interrelationships between those unobservable inputs. The guidance is effective for the Company for fiscal years and interim periods beginning on or after December 15, 2011. We believe that the adoption of this guidance will not have a material impact on our financial statements.

*Comprehensive Income*

In June 2011, the FASB issued authoritative guidance for presentation and disclosure of comprehensive income in the financial statements. Under the new guidance, a company may no longer present the components of other comprehensive income as part of the statement of changes in the Statement of Stockholder's Equity, and instead must present the components of comprehensive income

either in the Statement of Operations or in a separate statement immediately following the Statement of Operations. In addition, reclassification adjustments between comprehensive income and net income must be disclosed on the financial statements. This guidance is effective for the Company for fiscal years and interim periods beginning on or after December 15, 2011. We believe that the adoption of this guidance will not have a material impact on our financial statements.

**Results of Operations**

***Comparison of the Year Ended December 31, 2011 and the Year Ended December 31, 2010***

***Total Revenues***

The Company had no revenues for the years ended December 31, 2011 or December 31, 2010.

***General and Administrative Expenses***

General and administrative expenses consist primarily of salaries and related expenses for executive, finance and other administrative personnel, recruitment expenses, professional fees and other corporate expenses, including business development, investor relations, and general legal activities.

General and administrative expenses decreased $2,442,795, or 40.8%, to $3,547,829 for the year ended December 31, 2011 from $5,990,624 for the year ended December 31, 2010. The decrease is primarily attributed to 2010 investor relations services provided by two firms, for which we issued compensatory stock valued at $2,108,000. The agreements with these firms had been terminated in November, 2010, therefore, we did not incur these investor relations services in 2011.

***Research and Development Expenses***

Research and development expenses consist primarily of salaries and related personnel costs, fees paid to consultants and outside service providers for laboratory development and other expenses relating to the design, development, testing, and enhancement of our drug candidates. We expense our research and development costs as they are incurred.

Research and development expenses increased $8,057,386 or 204.8%, to $11,992,087 for the year ended December 31, 2011, from $3,934,701 for the year ended December 31, 2010. The increase is primarily due to the costs associated with the Serdaxin Phase IIb trial, where we incurred approximately $7,430,000 for the year ended December 31, 2011. The increase is also attributable to costs incurred for our preclinical compounds, particularly RX-5902, where we incurred approximately $550,000 in 2011.

***Patent Fees***

Our patent fees increased $216,102, or 65.5%, to $546,027 for the year ended December 31, 2011, from $329,925 for the year ended December 31, 2010. The increase was primarily due to legal costs to respond to additional patent applications, and translation fees associated with regionalizing patents in additional foreign jurisdictions for the year ended December 31, 2011.

***Depreciation and Amortization***

Depreciation and amortization expense decreased $5,589, or 11.0% to $45,070 for the year ended December 31, 2011 from $50,659 for the year ended December 31, 2010. The decrease is primarily due to fully depreciated assets for which we incurred depreciation in 2010 but not in 2011.

***Interest Income***

Interest income decreased $24,028, or 18.0% to $109,240 for the year ended December 31, 2011 from $133,268 for the year ended December 31, 2010. The decrease is primarily due to a decrease in interest rates and interest bearing investments for the year ended December 31, 2011 compared to the year ended December 31, 2010.

***Other Income***

Other income for the year ended December 31, 2010 was $56,047, which represents the settlement received from Amarex to resolve a payment dispute as described in Footnote 6 of Item 8 of this Form 10-K. We did not have other income for the year ended December 31, 2011.

***Unrealized Gain/(Loss) on Fair Value of Warrants***

Our warrants are recorded as liabilities at fair value. Warrants are valued using a lattice model. Changes in the fair value of warrants are recorded as an unrealized gain or loss in our Statement of Operations. In fiscal year 2011 and 2010, respectively, we recorded an unrealized gain (loss) on the fair value of our warrants of $4,778,450 and $(3,823,146). The variance in the unrealized gain (loss) between the years ended December 31, 2011 and December 31, 2010 is primarily due to changes in our stock price. The change in the fair value of our warrants is a non-cash item reflected in our financial statements.

***Unrealized Gain on Fair Value of Put Feature on Common Stock***

We extended anti-dilution protection to our investors in our December 18, 2007 and March 20, 2008 financings. According to the provisions of the financings, in the event that we issue shares below an effective price paid by these investors, the investor would thereupon receive additional shares in a ration outlined in the securities purchase agreement. In accordance with ASC 480, the anti-dilution provision is a written put recorded as a liability at fair value on our balance sheet. The provision is valued using a lattice model. Changes in the fair value of the put feature are recorded as an unrealized gain or loss in our Statement of Operations. For the year ended December 31, 2010, we recorded an unrealized gain on the fair value of the put feature of $97,713. Since the anti-dilution provision expired in 2010, there was no unrealized gain on the fair value of the put feature on common stock for the year ended December 31, 2011. The change in the fair value of the put feature is a non-cash item reflected in our financial statements.

***Net Loss***

As a result of the above, net loss for the year ended December 31, 2011 was $11,344,950, or $0.12 per share, compared to a net loss of $14,022,107, or $0.18 per share, for the year ended December 31, 2010.

***Comparison of the Year Ended December 31, 2010 and the Year Ended December 31, 2009***

***Total Revenues***

The Company had no revenues for the years ended December 31, 2010 or December 31, 2009.

***General and Administrative Expenses***

General and administrative expenses consist primarily of salaries and related expenses for executive, finance and other administrative personnel, recruitment expenses, professional fees and other corporate expenses, including business development, investor relations, and general legal activities.

General and administrative expenses increased $3,046,521, or 103.5%, to $5,990,624 for the year ended December 31, 2010 from $2,944,103 for the year ended December 31, 2009. The increase is primarily attributed to the $2,108,000 value of compensatory stock issued to two firms in exchange for investor relations services, as well as increased legal costs and insurance costs.

***Research and Development Expenses***

Research and development expenses consist primarily of salaries and related personnel costs, fees paid to consultants and outside service providers for laboratory development and other expenses relating to the design, development, testing, and enhancement of our drug candidates. We expense our research and development costs as they are incurred.

Research and development expenses increased $757,730 or 23.3%, to $3,934,701 for the year ended December 31, 2010, from $3,176,971 for the year ended December 31, 2009. The increase is primarily due to the costs associated with the commencement of Serdaxin's Phase IIB clinical trial in the fourth quarter, and the ongoing development of RX-3117. Research and development costs also increased due to costs associated with the Phase II clinical trials of Archexin and Zoraxel, as well as pre-clinical pipeline development. Research and development expenses were offset by a grant of $822,137 from the federal government which we were eligible for under the Qualified Therapeutic Discovery Project Program.

***Patent Fees***

Our patent fees increased $26,705, or 8.8%, to $329,925 for the year ended December 31, 2010, from $303,220 for the year ended December 31, 2009. The increase was primarily due to legal costs to respond to patent applications for the year ended December 31, 2010.

***Depreciation and Amortization***

Depreciation and amortization expense increased $9,055, or 21.8% to $50,659 for the year ended December 31, 2010 from $41,604 for the year ended December 31, 2009. The increase is primarily due to the amortization of the leasehold improvements to our office space, which were placed in service midway through 2009, but were in service for the entire year ended December 31, 2010.

***Interest Income***

Interest income increased $65,823, or 97.6% to $133,268 for the year ended December 31, 2010 from $67,445 for the year ended December 31, 2009. The increase is due to a greater average cash

balance due to financings for the year ended December 31, 2010, and higher interest rates on interest bearing investments.

***Other Income***

Other income for the year ended December 31, 2010 was $56,047, which represents the settlement received from Amarex to resolve a payment dispute as described in Footnote 6 of Item 8 of this Form 10-K. We did not have other income for the year ended December 31, 2009.

***Unrealized (Loss)/Gain on Fair Value of Warrants***

Our warrants are recorded as liabilities at fair value. Warrants are valued using a lattice model. Changes in the fair value of warrants are recorded as an unrealized gain or loss in our Statement of Operations. In fiscal year 2010 and 2009, respectively, we recorded an unrealized (loss) gain on the fair value of our warrants of $(3,823,146) and $1,793,101. The variance in the unrealized (loss) gain between the years ended December 31, 2010 and December 31, 2009 is primarily due to changes on our stock price. The change in the fair value of our warrants is a non-cash item reflected in our financial statements.

***Unrealized Gain on Fair Value of Put Feature on Common Stock***

We extended anti-dilution protection to our investors in our December 18, 2007 and March 20, 2008 financings. According to the provisions of our financings, in the event that we issue shares below an effective price paid by these investors, the investor would thereupon receive additional shares in a ration outlined in the securities purchase agreement. In accordance with ASC 480, the anti-dilution provision is a written put recorded as a liability at fair value on our balance sheet. The provision is valued using a lattice model. Changes in the fair value of the put feature are recorded as an unrealized gain or loss in our Statement of Operations. For the year ended December 31, 2010, we recorded an unrealized gain on the fair value of the put feature of $97,713, compared to an unrealized gain of $1,915,719 for the year ended December 31, 2009. The variance in the unrealized gain between the years ended December 31, 2010 and 2009 results from the put feature expiring in December 18, 2009 and March 20, 2010. The change in the fair value of the put feature is a non-cash item reflected in our financial statements.

***Net Loss***

As a result of the above, net loss for the year ended December 31, 2010 was $14,022,107, or $0.18 per share, compared to a net loss of $2,903,098, or $0.05 per share, for the year ended December 31, 2009.

***Research and Development Projects***

Research and development expenses are expensed as incurred. Research and development expenses consist primarily of salaries and related personnel costs, costs to acquire pharmaceutical products and product rights for development and amounts paid to contract research organizations, hospitals and laboratories for the provision of services and materials for drug development and clinical trials. Costs incurred in obtaining the license rights to technology in the research and development stage and have no alternative future uses are expensed as incurred. Our research and development programs are related to our oncology clinical stage drug candidate, Archexin, our CNS candidates Serdaxin and Zoraxel and pre-clinical stage drug candidates, RX-3117, RX-5902, RX-8243, RX-1792, RX-0047-Nano, RX-0201-Nano, and Nano-polymer Anticancer Drugs. Each of our drug candidates is in various stages of completion as described below. As we expand our clinical studies, we will enter into additional development agreements. Significant additional expenditures will be required if we complete our clinical trials, start new trials, apply for regulatory approvals, continue development of our technologies, expand our operations and bring our products to market. The eventual total cost of each clinical trial is dependent on a number of uncertainties such as trial design, the length of the trial, the number of clinical sites and the number of patients. The process of obtaining and maintaining regulatory approvals for new therapeutic products is lengthy, expensive and uncertain. Because the successful development of our most advanced drug candidates, Archexin, Serdaxin and Zoraxel, is uncertain, and because RX-3117, RX-5902, RX-8243, RX-1792, RX-0047-Nano, RX-0201-Nano, and Nano-polymer Anticancer Drugs are in early-stage development, we are unable to estimate the costs of completing our research and development programs, the timing of bringing such programs to market and, therefore, when material cash inflows could commence from the sale of these drug candidates. If these projects are not completed as planned, our results of operations and financial condition could be negatively affected.

*The table below summarizes the amounts spent on each of our research and development projects through December 31, 2011:*

| | 2011 | 2010 | 2009 | Cumulative from March 19, 2001 (Inception) to December 31, 2011 |
|---|---|---|---|---|
| **Clinical Candidates** | | | | |
| Archexin | $ 230,000 | $ 240,000 | $ 800,000 | $ 6,470,000 |
| Serdaxin | 7,430,000 | 1,220,000 | 200,000 | 9,650,000 |
| Zoraxel | 205,000 | 40,000 | 200,000 | 1,245,000 |
| **Preclinical Candidates** | | | | |
| RX-3117 | 1,397,500 | 1,500,000 | 250,000 | 3,197,500 |
| Other Preclinical Compounds | 1,190,000 | 270,000 | 200,000 | 2,710,000 |
| | $ 10,452,500 | $ 3,270,000 | $ 1,650,000 | $ 23,272,500 |

***Archexin®***

Archexin is a 20 nucleotide single stranded DNA anti-sense molecule, which we believe is a first-in-class inhibitor of the protein kinase Akt. Akt plays critical roles in cancer cell proliferation, survival, angiogenesis, metastasis, and drug resistance. Archexin received "orphan drug" designation from the

U.S. Food and Drug Administration, or FDA, for five cancer indications (renal cell carcinoma, or RCC, glioblastoma, ovarian cancer, stomach cancer and pancreatic cancer). The FDA orphan drug program provides seven years of marketing exclusivity after approval and tax incentives for clinical research. In October 2006, we announced the conclusion of the Phase I clinical trial of Archexin, our leading oncology drug candidate. The Phase I clinical trial of Archexin, which took place at Georgetown University and the University of Alabama, was an open-label, dose-escalation study with 14 day continuous infusion in 17 patients with solid tumors. The Phase I trial was intended primarily to assess the safety and tolerability of Archexin in patients with advanced cancer. The trial results showed that the dose limiting toxicity of Archexin occurring at 315 $mg/m^2$ dose in the form of fatigue. No other serious adverse events such as hematological toxicities were observed in this Phase I study. In the Phase I study stable disease was observed in two out of the 17 patients. Archexin is currently being studied in a Phase II clinical trial for the treatment of pancreatic cancer with enrollment completed in September, 2011, with results are currently anticipated in the third quarter of 2012. The Archexin Phase IIa trial is a single-arm, open-label study and is being conducted globally in the United States and India. Archexin will be administered in combination with gemcitabine in patients with advanced pancreatic cancer to assess safety and preliminary efficacy, maximum tolerated dose, and overall survival. We own one issued U.S. patent for Archexin.

The costs incurred for the Phase I clinical trial was approximately $1,500,000. As of December 31, 2011, we have spent approximately $6,470,000 for the development of Archexin and we estimate that the Phase IIa trials for pancreatic cancer patients will be completed in the third quarter of 2012 and will require approximately an additional $200,000 to complete.

***Serdaxin® (RX-10100)***

Serdaxin is an extended release formulation of clavulanic acid, which is an ingredient present in antibiotics approved by the FDA. We had been developing Serdaxin for the treatment of depression and neurodegenerative disorders. From January to September, 2011, we conducted a randomized, double-blind, placebo-controlled study compared two doses of Serdaxin, 0.5 mg and 5 mg, to placebo over an 8-week treatment period for major depressive disorder ("MDD") patients. On November 4, 2011, we released results that the study showed Serdaxin did not demonstrate efficacy compared to a placebo group as measured by the Montgomery-Asberg Depression Rating Scale ("MADRS"). All groups showed an approximate 14 point improvement in the protocol defined primary endpoint of MADRS, and had a substantial number of patients who demonstrated a meaningful clinical improvement from baseline. The study showed that Serdaxin was safe and well tolerated. At this point, we have not made any determinations of Serdaxin's future paths and have not allocated resources to the further development of Serdaxin for treatment for MDD.

During the year ended December 31, 2011, we incurred approximately $7,430,000 for costs associated with the Phase IIb trial for Serdaxin. Through December 31, 2011, the pre-clinical and clinical costs incurred for development of Serdaxin to date have been approximately $9,650,000. We estimate the Phase IIb trial has approximately $400,000 of additional costs that will be paid in of 2012.

***Zoraxel*™ (RX-10100)**

Zoraxel is an immediate release formulation of clavulanic acid, the same active ingredient found in our product candidate Serdaxin. The Phase IIa proof of concept, completed with positive results, was a randomized, double blind, placebo controlled and dose ranging (5 mg, 10 mg, 15 mg) study of 39 erectile dysfunction patients (ages of 18 to 65) treated with Zoraxel. The Phase IIb study is designed to assess Zoraxel's efficacy in approximately 150 male subjects, ages 18 to 70, with ED. The double blind, randomized, placebo-controlled, 12-week study will include IIEF as the primary endpoint following

treatment with Zoraxel at 25 and 50 mg doses.. However, given the recently reported results of the Serdaxin Phase IIb clinical trial, we are currently evaluating how to proceed with the Phase IIb study for Zoraxel.

Through December 31, 2011, the costs incurred for development of Zoraxel to date have been approximately $1,245,000. We currently estimate that these Phase IIb studies would require approximately $2,300,000 throughout 2012 and 2013.

***Pre-clinical Pipeline***

On September 21, 2009, we closed on a securities purchase agreement with Teva Pharmaceutical Industries Limited ("Teva"), under which Teva purchased 3,102,837 shares of our common stock for $3.5 million. Contemporaneous with the execution and delivery of this agreement, the parties executed a research and exclusive license option agreement ("RELO") pursuant to which we agreed to use $2,000,000 from the gross proceeds of the issuance and sale of shares to Teva to fund a research and development program for the pre-clinical development of RX-3117. On January 19, 2011, we entered into a second amendment with Teva to the securities purchase agreement closed in September, 2009. Pursuant to the terms of the amendment, TEVA purchased 2,334,515 shares of our common stock in a private offering for gross proceeds of $3.95 million. The investment by TEVA is restricted to further supporting the research and development program for the pre-clinical development of RX-3117. We will be eligible to receive royalties on net sales of RX-3117 worldwide. This compound may enter an exploratory early stage clinical study during the first quarter of 2012.

RX-5902 may enter Phase I clinical trials during the first half of 2012. RX-1792, RX-8243, RX-0201-Nano, RX-0047-Nano and RX-21101 are in a pre-clinical stage of development. Through December 31, 2011, the costs incurred for development of these compounds to date have been approximately $2,710,000. The estimated cost to complete pre-clinical toxicology and Phase I clinical trials is estimated to be approximately $1,500,000 per each compound.

The conduct of the clinical trial and toxicology studies described above are being accomplished in conjunction with third-party clinical research organizations at external locations. This business practice is typical for the pharmaceutical industry and companies like us. As a result, the risk of completion or delay of these studies is not within our direct control and a program delay may occur due to circumstances outside our control. A delay in any of these programs may not necessarily have a direct impact on our daily operations. However, a delay could result in additional expenses for us.

We will need to raise additional money through debt and/or equity offerings in order to continue to develop our drug candidates. If we are not able to raise sufficient additional money, we will have to reduce our research and development activities. We will first reduce research and development activities associated with our preclinical compounds. To the extent necessary, we will then reduce our research and development activities related to some or all of our clinical drugs.

**Liquidity and Capital Resources**

***Operating Activities***

Cash used in operating activities was $15,530,306 for the year ended December 31, 2011. The operating cash flows during the year ended December 31, 2011 reflect our net loss of $11,344,950 and a net decrease of cash components of working capital and non-cash charges totaling $4,185,356. Cash used in operating activities was $6,986,598 and $5,146,845 for the year ended December 31, 2010 and 2009, respectively.

Cash used in investing activities of $545,919 for the year ended December 31, 2011, consisted of purchases of marketable securities and equipment of $8,000,000 and $16,047, respectively, and an increase in restricted cash of $1,029,872, offset by $8,500,000 from proceeds received from the sale of marketable securities. Cash used in investing activities for the year ended December 31, 2010 was $660,339 and cash provided by investing activities for the year ended December 31, 2009 was $1,341,825.

Cash provided by financing activities of $13,597,474 for the year ended December 31, 2011 consisted of net proceeds of $317,961 from the exercise of stock warrants, $59,240 from the exercise of stock options, $3,926,397 from the issuance of 2,334,515 shares to Teva and $9,293,876 from the issuance of 8,333,333 shares of common stock to investors. The investors were also issued warrants to purchase 3,333,333 shares of common stock. Cash provided by financing activities was $12,688,944 and $10,733,922 for the years ended December 31, 2010 and 2009, respectively.

***Financings***

We have financed our operations since inception primarily through equity and convertible debt financings and interest income from investments of cash and cash equivalents. During fiscal year 2011, we had a net decrease in cash and cash equivalents of $2,478,751. The decrease resulted from cash used in operating and investing activities of $15,530,306 and $545,919 offset by cash provided by financing activities of $13,597,474.

On June 5, 2009, the Company closed on a purchase agreement to issue 2,857,143 shares of common stock at a price of $1.05 per share to an institutional investor for gross proceeds of $3,000,000 and incurred $289,090 of stock issuance costs. The investor was also issued:

1) Series I warrants to purchase 2,222,222 shares of common stock at a purchase price of $1.05 per share at any time before September 3, 2009;

2) Series II warrants to purchase 1,866,666 shares of common stock at a purchase price of $1.25 per share at any time from December 3, 2009 to June 5, 2012; and

3) Series III warrants to purchase 1,555,555 shares of common stock at a purchase price of $1.50 per share at any time from December 3, 2009 to June 5, 2014.

These warrants have been valued at $3,328,937 and recorded as warrant liabilities. The closing costs included 142,857 warrants valued at $122,257 and were recorded as a financing expense. Series I warrants to purchase 2,222,222 shares of common stock at a purchase price of $1.05 per share have expired.

On September 21, 2009, the Company issued 3,102,837 shares of common stock at a purchase price of $1.13 per share to Teva for total net proceeds of $3,371,340, which include $128,659 of stock issuance costs.

On October 23, 2009, the Company closed on a purchase agreement to issue 6,072,383 shares of common stock at a price of $0.82 per share to five institutional investors for gross proceeds of $5,000,000 less $351,928 of stock issuance costs. The investors were also issued warrants to purchase 2,125,334 shares of common stock at a purchase price of $1.00 per share, exercisable on or after the date of delivery until the five-year anniversary. These warrants have been valued at $1,012,934 and recorded as warrant liabilities. The closing costs included 245,932 warrants valued at $101,693 and were recorded as a financing expense.

On June 30, 2010, the Company closed on a purchase agreement to issue 6,666,667 shares of common stock at a price of $1.50 per share to an institutional investor for net proceeds of $9,318,227 which includes $681,773 of stock issuance costs. The investors were also issued warrants to purchase 2,000,000 shares of common stock at a purchase price of $1.90 per share, exercisable on or after the date of delivery until the five-year anniversary. There warrants have been valued at $1,800,800 and recorded as warrant liabilities. The closing costs included 200,000 warrants, valued at $180,080 and recorded as a financing expense.

On March 31, 2011, the Company closed on a purchase agreement to issue 8,333,333 shares of common stock at a price of $1.50 per share to an institutional investor for net proceeds of $9,293,876 which includes $706,124 of cash stock issuance costs. The investors were also issued warrants to purchase 3,333,333 shares of common stock at a purchase price of $1.50 per share, exercisable on or after six months from the date of delivery until the five-year anniversary of the date the warrants are exercisable. There warrants were valued at $2,826,666 and recorded as warrant liabilities. The closing costs included 208,333 warrants, valued at $97,667 and recorded as a financing expense.

For the next 15 months, we will have to fund all of our operations and capital expenditures from the net proceeds of equity and debt offerings we may make, cash on hand, licensing fees and grants. Although we expect to have to pursue additional financing, there can be no assurance that we will be able to secure financing when needed or obtain such financing on terms satisfactory to us, if at all, or that any additional funding we do obtain will be sufficient to meet our needs in the long term. If we are not able to raise sufficient additional money, we will have to reduce our research and development activities.

***Contractual Obligations***

We have contracted with various vendors to provide research and development services. The terms of these agreements usually require an initiation fee and monthly or periodic payments over the term of the agreement, ranging from 2 months to 36 months. The costs to be incurred are estimated and are subject to revision. As of December 31, 2011, the total contract value of these agreements was approximately $19,406,124 and we made payments totaling $15,103,318 under the terms of the agreements. All of these agreements may be terminated by either party upon appropriate notice as stipulated in the respective agreements.

On September 9, 2010, we and three of our key executives entered into Amended and Restated Employment Agreements. The Amended and Restated Employment Agreements replace the prior employment contracts entered into on August 10, 2009. We entered into the Amended and Restated Employment Agreements in order to provide the key executives with: (i) an automatic one year renewal upon the expiration of the initial three year term and upon each consecutive year term unless such employment with the Company is terminated earlier by the Company or the executives; (ii) an annual base salary adjustment for inflation as determined by the Consumer Price Index subject to review by the Company's Compensation Committee; (iii) an increase in the Company provided life insurance coverage from an amount equal to two times the executive's annual base salary to an amount equal to four times the executive's annual base salary; and (iv) a one-time cash payment, subject to applicable withholding requirements under applicable state and federal law, in an amount equal to the executive's increased income tax costs as a result of payments made to the executive by the Company under the change of control provisions of the Amended and Restated Employment Agreement. Other than these changes, the new contracts have substantially similar terms to the executives' prior employment agreements. The agreements result in annual commitments of $350,000, $250,000 and $200,000, respectively.

On June 22, 2009, we entered into a License Agreement with Korea Research Institute of Chemical Technology (KRICT) to acquire the rights to all intellectual properties related to Quinoxaline-

Piperazine derivatives that were synthesized under a Joint Research Agreement. The initial license fee was $100,000, all of which was paid as of December 31, 2009. The agreement with KRICT calls for a one-time milestone payment of $1,000,000 within 30 days after the first achievement of marketing approval of the first commercial product arising out of or in connection with the use of KRICT's intellectual properties. As of December 31, 2011, this milestone has not occurred.

On June 29, 2009, we signed a five year lease for 5,466 square feet of office space in Rockville, Maryland commencing on June 29, 2009. The lease requires annual base rents of $76,524 with increases over the next five years. Under the leasing agreement, we pay our allocable portion of real estate taxes and common area operating charges. We paid $148,593, 108,418, and $38,262 for rent under this lease in the years ended December 31, 2011, 2010 and 2009, respectively.

Future rental payments over the next five years and thereafter are as follows:

| | |
|---|---|
| 2012 | 158,835 |
| 2013 | 162,806 |
| 2014 | 82,408 |
| | $404,049 |

In connection with the lease agreement, we issued a letter of credit of $100,000 in favor of the lessor. We have restricted cash equivalents of the same amount for the letter of credit. On August 2, 2010, the letter of credit was reduced to $50,000 per the lease agreement.

On September 21, 2009, the Company closed on a securities purchase agreement with Teva, under which Teva purchased 3,102,837 shares of our common stock for $3.5 million. Contemporaneous with the execution and delivery of this agreement, the parties executed a research and exclusive license option agreement ("RELO") pursuant to which the Company agreed to use $2,000,000 from the gross proceeds of the issuance and sale of shares to Teva to fund a research and development program for the pre-clinical development of RX-3117. On January 19, 2011, the Company entered into a second amendment to the securities purchase agreement (the "Second Amendment") in which Teva purchased 2,334,515 shares of the common stock of the Company for gross proceeds of $3,950,000, which the Company agreed to use for the further preclinical development of RX-3117. At December 31, 2011, the Company has proceeds remaining of $1,394,265 and has included this amount in restricted cash equivalents. The Company will be eligible to receive royalties on net sales of RX-3117 worldwide.

On June 28, 2010, we signed a one year renewal to use lab space commencing on July 1, 2010. The lease requires monthly rental payments of $4,554.

We established a 401(k) plan for our employees where we match 100% of the first 3% of the employee's deferral plus 50% of an additional 2% of the employee's deferral. Expense related to this matching contribution aggregated $66,162, $65,019, and $49,519 for the years ended December 31, 2011, 2010, and 2009, respectively.

On August 31, 2011, we entered into an agreement with a consultant for advisory services pertaining to securing of grants or other funding sources. Per the terms of the agreement, the consultant will be compensated in shares of restricted common stock calculated by a formula applied to the funding received. As of December 31, 2011, we had not received funding or issued stock resulting from this agreement.

The table below presents contractual cash obligations by period, as of December 31, 2011.

| | Payments due by period | | | | |
|---|---|---|---|---|---|
| Contractual Obligations | Total | Less than 1 year | 1-3 years | 3-5 years | Greater than 5 years |
| Operating Leases | $ 431,373 | $ 186,519 | $ 245,214 | $ - | $ - |
| **Total:** | $ 431,373 | $ 186,519 | $ 245,214 | $ - | $ - |

***Current and Future Financing Needs***

We have incurred negative cash flow from operations since we started our business. We have spent, and expect to continue to spend, substantial amounts in connection with implementing our business strategy, including our planned product development efforts, our clinical trials, and our research and development efforts. Total cash, including restricted cash and marketable securities, was $13,243,253 as of December 31, 2011. Based on our current plans and our capital resources, we believe that our cash and cash equivalents will be sufficient to enable us to meet our minimum planned operating needs through the next fifteen months, which would entail focusing our resources on Phase II clinical trials of Archexin, and the further development of our preclinical pipeline. Through the end of 2012, we expect to spend a minimum of approximately $0.2 million on clinical development for Phase II clinical trial of Archexin, and approximately $0.4 million will be paid to close out the Serdaxin MDD Phase IIb clinical trial. These figures include our commitments described under "Contractual Obligations of this Item 7. We also expect to pay $4.3 million on the development of our preclinical pipeline, $4.7 million on general corporate expenses and $220,000 on facilities rent. We will need to seek additional financing to implement and fund other drug candidate development, clinical trial and research and development efforts to the maximum extent of our operating plan, including in-vivo animal and pre-clinical studies, Phase II clinical trials for new product candidates, as well as other research and development projects. If we are not able to secure additional financing, we will not be able to implement and fund the research and development.

However, the actual amount of funds we will need to operate is subject to many factors, some of which are beyond our control. These factors include the following:

- the progress of our product development activities;
- the number and scope of our product development programs;
- the progress of our pre-clinical and clinical trial activities;
- the progress of the development efforts of parties with whom we have entered into collaboration agreements;
- our ability to maintain current collaboration programs and to establish new collaboration arrangements;
- the costs involved in prosecuting and enforcing patent claims and other intellectual property rights; and
- the costs and timing of regulatory approvals.

**Impact of Inflation**

To date inflationary factors have not had a significant effect on our operations.

**Off-Balance Sheet Arrangements**

We do not have any off-balance sheet arrangements.

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

For the year ended December 31, 2011, we are exposed to the following market risks:

***Interest Rate Risk***

We invest our cash in a variety of financial instruments. At December 31, 2011, our cash was invested primarily in short term bank deposits and municipal obligations, all of which were denominated in U.S. dollars. Due to the conservative nature of these investments, which primarily bear interest at fixed rates, we do not believe we have material exposure to interest rate risk. At December 31, 2011, we had no debt instruments on our balance sheet.

***Foreign Currency Risk***

We are exposed to risks associated with foreign currency transactions on contracts with vendors associated outside of the United States. Accordingly changes in the value of the U.S. dollar, relative to other currencies, may have an impact on our financial statements and earnings. The number and dollar amount of contracts denominated in foreign currency is immaterial; therefore, we believe we do not have material exposure to foreign currency risk.

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

Our financial statements and financial statement schedule and the Report of the Independent Registered Public Accounting Firm thereon filed pursuant to this Item 8 and are included in this annual report on Form 10-K beginning on page F-1.

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

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 evaluated the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rule 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934 (the "Exchange Act")) as of the end of the period covered by this report. Based upon that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures as of the end of the period covered by this report were effective such that the information required to be disclosed by us in reports filed under the Securities Exchange Act of 1934 is (i) recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms and (ii) accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding disclosure. A controls system cannot provide absolute assurance, however, that the objectives of the controls system are met, and no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within a company have been detected.

*Changes in Internal Control Over Financial Reporting.* During the most recent quarter ended December 31, 2011, there has been no change in our internal control over financial reporting (as defined

in Rule 13a-15(f) and 15d-15(f) under the Exchange Act) ) that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

**MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING**

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act). Our 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 and includes those policies and procedures that:

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

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

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

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

Our management, with the participation of the Chief Executive Officer and Chief Financial Officer, assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2011. In making this assessment, the Company's management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control-Integrated Framework.

Based on this evaluation, our management, with the participation of the Chief Executive Officer and Chief Financial Officer, concluded that, as of December 31, 2011 our internal control over financial reporting was effective.

Management assessment of the effectiveness of the Company's internal control over financial reporting has been audited by ParenteBeard LLC, an independent registered public accounting firm. ParenteBeard LLC has issued an attestation report on the effectiveness of the Company's internal control over financial reporting, which appears herein.

Report of Independent Registered Public Accounting Firm
on Internal Control Over Financial Reporting

To the Board of Directors
Rexahn Pharmaceuticals, Inc.

We have audited Rexahn Pharmaceuticals, Inc.'s (the "Company") internal control over financial reporting as of December 31, 2011, based on criteria established in *Internal Control - Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Rexahn Pharmaceuticals, Inc.'s management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit 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.

An entity'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 accounting principles generally accepted in the United States of America . An entity's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the entity; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the entity are being made only in accordance with authorizations of management and directors of the entity; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the entity'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.

Report of Independent Registered Public Accounting Firm
on Internal Control Over Financial Reporting (continued)

In our opinion, Rexahn Pharmaceuticals, Inc. maintained, in all material respects, effective internal control over financial reporting as of December 31, 2011, based on criteria established in *Internal Control - Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the balance sheet as of December 31, 2011 and 2010, , and the related statements of operations, stockholders' equity (deficit) and comprehensive loss, and cash flows for each of the years in the three-year period ended December 31, 2011 and the cumulative period from March 19, 2011 (inception) to Deecmber 31, 2011, of Rexahn Pharmaceuticals, Inc., and our report dated March 15, 2012 expressed an unqualified opinion.

/s/ PARENTEBEARD LLC

Reading, Pennsylvania
March 15, 2012

**Item 9B. Other Information.**

None.

## PART III

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

The information to be provided under the caption "Election of Directors," to be contained in the Definitive Proxy Statement and required to be disclosed in this Item 10, is hereby incorporated by reference in this Item 10; and the information to be provided under the caption "Section 16(a) Beneficial Ownership Reporting Compliance," to be contained in the Definitive Proxy Statement and required to be disclosed pursuant to Section 16(a) of the Exchange Act, is also hereby incorporated by reference in this Item 9.

### Code of Ethics

We have adopted a code of ethics that applies to our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions. Rexahn's Code of Ethics is posted on its website, which is located at www.rexahn.com.

We intend to satisfy any disclosure requirement regarding an amendment to, or waiver from, a provision of this code of ethics by posting such information on our website, at the address specified above.

### Item 11. Executive Compensation.

The information to be provided under the caption "Executive Compensation and Other Matters," to be contained in the Definitive Proxy Statement and required to be disclosed in this Item 11, is hereby incorporated by reference in this Item 11.

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

The information to be provided under the captions "Equity Compensation Plan Information" and "Security Ownership of Management and Certain Security Holders," each to be contained in the Definitive Proxy Statement and required to be disclosed in this Item 12, is hereby incorporated by reference in this Item 12.

### Item 13. Certain Relationships and Related Transactions; and Director Independence.

### Related Transactions

The information to be provided under the caption "Certain Relationships and Related Transactions," to be contained in the Definitive Proxy Statement and required to be disclosed in this Item 13, is hereby incorporated by reference in this Item 13.

### Item 14. Principal Accounting Fees and Services.

The information to be provided under the caption "Proposal 2 Ratification of the Appointment of the Independent Registered Public Accounting Firm, Fees," to be contained in the Definitive Proxy Statement and required to be disclosed in this Item 14, is hereby incorporated by reference in this Item 14.

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

(a) The following documents are filed as a part of this Annual Report on Form 10-K:

(1) Financial Statements:



(2) Exhibits:

The documents listed below are filed with this Annual Report on Form 10-K as exhibits or incorporated into this Annual Report on Form 10-K by reference as noted:

| Exhibit Number | Exhibit Description |
|---|---|
| 3.1 | Amended and Restated Certificate of Incorporation, filed as Appendix G to the Company's Definitive Proxy Statement on Schedule 14A (File No. 000-50590) dated April 29, 2005, is incorporated herein by reference. |
| 3.2 | Amended and Restated Bylaws, filed as Exhibit 3.1 to the Company's Current Report on Form 8-K filed on March 26, 2010, is incorporated herein by reference. |
| 4.1 | Specimen Certificate for the Company's Common Stock, par value $.0001 per share, filed as Exhibit 4.3 to the Company's Registration Statement on Form S-8 (File No. 333-129294) dated October 28, 2005, is incorporated herein by reference. |
| 4.2 | Form of Senior Debt Securities Indenture, filed as Exhibit 4.3 to the Company's Registration Statement on Form S-3 dated June 22, 2011, is incorporated herein by reference. |
| 4.3 | Form of Subordinated Debt Securities Indenture, filed as Exhibit 4.3 to the Company's Registration Statement on Form S-3 dated June 22, 2011 is incorporated herein by reference. |
| *10.1.1 | Rexahn Pharmaceuticals, Inc. Stock Option Plan, as amended, filed as Exhibit 4.4 to the Company's Registration Statement on Form S-8 (File No. 333-129294) dated October 28, 2005, is incorporated herein by reference. |
| *10.1.2 | Form of Stock Option Grant Agreement for Employees, filed as Exhibit 4.5.1 to the Company's Registration Statement on Form S-8 (File No. 333-129294) dated October 28, 2005, is incorporated herein by reference. |
| *10.1.3 | Form of Stock Option Grant Agreement for Non-Employee Directors and Consultants, filed as Exhibit 4.5.2 to the Company's Registration Statement on Form S-8 (File No. 333-129294) dated October 28, 2005, is incorporated herein by reference. |
| *10.2 | Employment Agreement, dated as of September 9, 2010, by and between Rexahn |

| | |
|---|---|
| | Pharmaceuticals, Inc. and C. H. Ahn, filed as Exhibit 10.1 to the Company's Current Report on Form 8-K filed on September 10, 2010, is incorporated herein by reference. |
| *10.3 | Employment Agreement, dated as of September 9, 2010, by and between Rexahn Pharmaceuticals, Inc. and T. H. Jeong, filed as Exhibit 10.3 to the Company's Current Report on Form 8-K filed on September 10, 2010, is incorporated herein by reference. |
| 10.4 | Lease Agreement, dated June 5, 2009, by and between Rexahn Pharmaceuticals, Inc. and The Realty Associates Fund V, L.P., filed as Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2009, is incorporated herein by reference |
| *10.5 | Employment Agreement, dated as of September 9, 2010, by and between Rexahn Pharmaceuticals, Inc. and Rakesh Soni, filed as Exhibit 10.2 to the Company's Current Report on Form 8-K filed on September 10, 2010, is incorporated herein by reference. |
| 10.6 | Securities Purchase Agreement, dated as of May 19, 2009 by and between Rexhan Pharmaceuticals, Inc. and the purchaser signatory thereto, filed as Exhibit 10.1 to the Company's Current Report on Form 8-K filed on May 20, 2009, is incorporated herein by reference. |
| 10.7 | Form of Warrant for the Company's Series I, II, and III Common Stock Purchase Warrants, filed as Exhibit 4.1 to the Company's Current Report on Form 8-K filed on May 20, 2009, is incorporated herein by reference. |
| 10.8 | Research and Exclusive License Option Agreement, dated as of June 26, 2009, by and between Rexahn Pharmaceuticals, Inc. and Teva Pharmaceutical Industries Limited, filed as Exhibit 10.1 to the Company's Current Report on Form 8-K filed on September 21, 2009, is incorporated herein by reference. |
| 10.9 | Securities Purchase Agreement, dated as of June 26, 2009, by and between Rexahn Pharmaceuticals, Inc. and Teva Pharmaceutical Industries Limited (the "Teva Securities Purchase Agreement"), filed as Exhibit 10.2 to the Company's Current Report on Form 8-K filed on September 21, 2009, and Amendment No. 1 to the Teva Securities Purchase Agreement, filed as Exhibit 10.3 to the Company's Current Report on Form 8-K filed on September 21, 2009, are incorporated herein by reference. |
| 10.10 | Securities Purchase Agreement, dated as of October 19, 2009, by and between Rexahn Pharmaceuticals, Inc. and the purchasers signatory thereto, filed as Exhibit 10.1 to the Company's Current Report on Form 8-K, filed on October 20, 2009, is incorporated herein by reference. |
| 10.11 | Form of Warrant for the Company's Common Stock Purchase Warrants, filed as Exhibit 4.1 to the Company's Current Report on Form 8-K filed on October 20, 2009, is incorporated herein by reference. |
| 10.12 | Securities Purchase Agreement, dated as of June 28, 2010 by and between Rexahn Pharmaceuticals, Inc. and the purchasers signatory thereto, filed as Exhibit 10.1 to the Company's Current Report on Form 8-K, filed on June 29, 2010, is incorporated herein by reference. |
| 10.13 | Form of Warrant for the Company's Common Stock Purchase Warrants, filed as Exhibit 4.1 to the Company's Current Report on Form 8-K filed on June 29, 2010, is incorporated herein by reference. |
| 10.14 | Amendment No. 2 to the Teva Securities Purchase Agreement, filed as Exhibit 10.1 to the Company's Current Report on Form 8-K filed on January 20, 2011, is incorporated herein by reference. |
| 10.15 | Form of Warrant for the Company's Common Stock Purchase Warrants, filed as Exhibit 4.1 to the Company's Current Report on Form 8-K filed on March 30, 2011, is incorporated herein by reference. |
| 12 | Statement re Computation of Ratios |

| | |
|---|---|
| 14 | Code of Ethics and Business Conduct, filed as Exhibit 14 to the Company's Annual Report on 10-K for the fiscal year ended December 31, 2008, filed on March 16, 2009, is incorporated herein by reference. |
| 16 | Letter of Lazar Levine & Felix LLP dated February 27, 2009, filed as Exhibit 16.1 to the Company's Amended Current Report on Form 8-K filed on March 2, 2009, is incorporated herein by reference. |
| 23 | Consent of ParenteBeard LLC, independent registered public accounting firm. |
| 24 | Power of Attorney |
| 31.1 | Certification of Chief Executive Officer Pursuant to Rule 13a-14(a) or Rule 15d-14(a). |
| 31.2 | Certification of Chief Financial Officer Pursuant to Rule 13a-14(a) or Rule 15d-14(a). |
| 32.1 | Certification of Chief Executive Officer of Periodic Report Pursuant to 18 U.S.C. Section 1350. |
| 32.2 | Certification of Chief Financial Officer of Periodic Report Pursuant to 18 U.S.C. Section 1350. |
| 101.INS | XBRL Instance Document |
| 101.SCH | XBRL Taxonomy Extension Schema |
| 101.CAL | XBRL Taxonomy Calculation Linkbase |
| 101.DEF | XBRL Taxonomy Definition Linkbase |
| 101.LAB | XBRL Taxonomy Label Linkbase |
| 101.PRE | XBRL Taxonomy Presentation Linkbase |

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* Management contract or compensation plan or arrangement.

**SIGNATURES**

In accordance with the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the issuer has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized on this 15 day of March, 2012.

**REXAHN PHARMACEUTICALS, INC.**

By: /s/ Chang H. Ahn
Chang H. Ahn
Chairman and Chief Executive Officer

In accordance with the requirement of the Securities Exchange Act of 1934, this report has been signed on the 15 day of March, 2012 by the following persons on behalf of the issuer and in the capacities indicated:

| Name | Title |
|---|---|
| /s/ Chang H. Ahn* | Chairman and Chief Executive Officer |
| Chang H. Ahn | (Principal Executive Officer) |
| /s/ Tae Heum Jeong* | Chief Financial Officer, Secretary and |
| Tae Heum Jeong | Director (Principal Financial and Accounting Officer) |
| /s/ Peter Brandt* | Director |
| Peter Brandt | |
| /s/ David McIntosh* | Director |
| David McIntosh | |
| /s/ Charles Beever* | Director |
| Charles Beever | |
| /s/ Kwang Soo Cheong* | Director |
| Kwang Soo Cheong | |
| /s/ Richard Kivel* | Director |
| Richard Kivel | |

* By: /s/ Tae Heum Jeong, Attorney-in Fact
Tae Heum Jeong, Attorney-in-Fact**

** By authority of the power of attorney filed as Exhibit 24 hereto.

Report of Independent Registered Public Accounting Firm

To the Board of Directors
Rexahn Pharmaceuticals, Inc.

We have audited the accompanying balance sheets of Rexahn Pharmaceuticals, Inc. (the "Company") (a development stage company) as of December 31, 2011 and 2010, and the related statements of operations, stockholders' equity (deficit) and comprehensive loss, and cash flows for each of the years in the period ended December 31, 2011, and the cumulative period from March 19, 2001 (inception) to December 31, 2011. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

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

In our opinion, the financial statements referred to above, present fairly, in all material respects, the financial position of Rexahn Pharmaceuticals, Inc. as of December 31, 2011 and 2010, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2011, and the cumulative period from March 19, 2001 (inception) to December 31, 2011, in conformity with accounting principles generally accepted in the United States of America.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Rexahn Pharmaceuticals, Inc. internal control over financial reporting as of December 31, 2011, based on criteria established in *Internal Control-Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), and our report dated March 15, 2012 expressed an unqualified opinion.

/s/ PARENTEBEARD LLC

Reading, Pennsylvania
March 15, 2012

**REXAHN PHARMACEUTICALS, INC.**
(A Development Stage Company)
Balance Sheet

| | December 31, 2011 | December 31, 2010 |
|---|---|---|
| **ASSETS** | | |
| **Current Assets:** | | |
| Cash and cash equivalents | **$ 9,861,488** | $ 12,340,239 |
| Marketable securities (note 4) | **1,950,000** | 2,451,620 |
| Research tax credit receivable (note 16) | **-** | 145,513 |
| Prepaid expenses and other current assets (note 5) | **333,171** | 706,649 |
| Note receivable – current portion (note 6) | **18,682** | 28,023 |
| **Total Current Assets** | **12,163,341** | 15,672,044 |
| **Restricted Cash Equivalents** (note 15) | **1,431,765** | 401,893 |
| **Note Receivable** (note 6) | - | 18,682 |
| **Equipment, Net** (note 7) | **94,542** | 123,565 |
| **Total Assets** | **$ 13,689,648** | $ 16,216,184 |
| **LIABILITIES AND STOCKHOLDERS' EQUITY** | | |
| **Current Liabilities:** | | |
| Accounts payable and accrued expenses (note 8) | **$ 1,185,405** | $ 1,820,900 |
| **Deferred Research and Development Arrangement** (note 9) | **825,000** | 900,000 |
| **Other Liabilities** (note 10) | **104,388** | 133,117 |
| **Warrant Liabilities** (note 13) | **868,725** | 2,966,710 |
| **Total Liabilities** | **2,983,518** | 5,820,727 |
| **Commitments and Contingencies** (note 16) | | |
| **Stockholders' Equity** (note 11): | | |
| Preferred stock, par value $0.0001, 100,000,000 authorized shares, none issued and outstanding | **-** | - |
| Common stock, par value $0.0001, 500,000,000 authorized shares, 95,359,861 (2010 – 84,175,054) issued and 95,345,656 (2010 – 84,160,849) outstanding | **9,536** | 8,418 |
| Additional paid-in capital | **67,809,617** | 56,157,452 |
| Accumulated other comprehensive loss | **-** | (2,340) |
| Accumulated deficit during the development stage | **(57,084,613)** | (45,739,663) |
| Treasury stock, 14,205 shares, at cost | **(28,410)** | (28,410) |
| **Total Stockholders' Equity** | **10,706,130** | 10,395,457 |
| **Total Liabilities and Stockholders' Equity** | **$ 13,689,648** | $ 16,216,184 |

(See accompanying notes to financial statements.)

**REXAHN PHARMACEUTICALS, INC.**
(A Development Stage Company)
Statement of Operations

| | For the Year Ended December 31, | | | Cumulative from March 19, 2001 (Inception) to December 31, |
|---|---|---|---|---|
| | **2011** | 2010 | 2009 | 2011 |
| **Revenues:** | **$ -** | $ - | $ - | $ - |
| **Expenses:** | | | | |
| General and administrative | **3,547,829** | 5,990,624 | 2,944,103 | 27,346,995 |
| Research and development | **11,992,087** | 3,934,701 | 3,176,971 | 31,885,603 |
| Patent fees | **546,027** | 329,925 | 303,220 | 2,101,005 |
| Depreciation and amortization | **45,070** | 50,659 | 41,604 | 640,537 |
| **Total Expenses** | **16,131,013** | 10,305,909 | 6,465,898 | 61,974,140 |
| **Loss from Operations** | **(16,131,013)** | (10,305,909) | (6,465,898) | (61,974,140) |
| **Other Income (Expense)** | | | | |
| Realized (loss) gain on marketable securities | **(3,960)** | - | 11,025 | (13,301) |
| Interest income | **109,240** | 133,268 | 67,445 | 1,421,307 |
| Interest expense | **-** | - | - | (301,147) |
| Other income | **-** | 56,047 | - | 56,047 |
| Unrealized gain (loss) on fair value of warrants | **4,778,450** | (3,823,146) | 1,793,101 | 3,676,105 |
| Unrealized gain on fair value of put feature on common stock | **-** | 97,713 | 1,915,179 | 2,315,539 |
| Financing expense | **(97,667)** | (180,080) | (223,950) | (640,023) |
| Beneficial conversion feature | **-** | - | - | (1,625,000) |
| **Total Other Income (Expense)** | **4,786,063** | (3,716,198) | 3,562,800 | 4,889,527 |
| **Net Loss Before Provision for Income Taxes** | **(11,344,950)** | (14,022,107) | (2,903,098) | (57,084,613) |
| **Provision for Income Taxes** | **-** | - | - | - |
| **Net Loss** | **$ (11,344,950)** | $ (14,022,107) | $ (2,903,098) | $ (57,084,613) |
| Net loss per share, basic and diluted | **$(0.12)** | $(0.18) | $(0.05) | |
| Weighted average number of shares outstanding, basic and diluted | **93,048,490** | 78,662,495 | 61,441,442 | |

(See accompanying notes to financial statements.)

**REXAHN PHARMACEUTICALS, INC.**
(A Development Stage Company)
Statements of Stockholders' Equity (Deficit) and Comprehensive Loss
Period from March 19, 2001 (Inception) to December 31, 2011

| | Common Stock | | Additional | Accumulated Deficit | Treasury Stock | | Accumulated Other | Total |
|---|---|---|---|---|---|---|---|---|
| | Number of shares | Amount | Paid in Capital | During the Development Stage | Number of stock | Amount | Comprehensive Loss | Stockholders' Equity (Deficit) |
| **Opening balance, March 19, 2001** | - | $ - | $ - | $ - | - | $ - | $ - | $ - |
| Common stock issued | 7,126,666 | 71,266 | 4,448,702 | - | - | - | - | 4,519,968 |
| Net loss | - | - | - | (625,109) | - | - | - | (625,109) |
| Balances at, December 31, 2001 | 7,126,666 | 71,266 | 4,448,702 | (625,109) | - | - | - | 3,894,859 |
| Net loss | - | - | - | (1,181,157) | - | - | - | (1,181,157) |
| Balances at, December 31, 2002 | 7,126,666 | 71,266 | 4,448,702 | (1,806,266) | - | - | - | 2,713,702 |
| Common stock issued | 500,000 | 5,000 | 1,995,000 | - | - | - | - | 2,000,000 |
| Stock based compensation | - | - | 538,074 | - | - | - | - | 538,074 |
| Net loss | - | - | - | (2,775,075) | - | - | - | (2,775,075) |
| Balances at, December 31, 2003 | 7,626,666 | 76,266 | 6,981,776 | (4,581,341) | - | - | - | 2,476,701 |
| Common stock issued | 1,500 | 15 | 1,785 | - | - | - | - | 1,800 |
| Stock based compensation | - | - | 230,770 | - | - | - | - | 230,770 |
| Net loss | - | - | - | (3,273,442) | - | - | - | (3,273,442) |
| Balances at, December 31, 2004 | 7,628,166 | 76,281 | 7,214,331 | (7,854,783) | - | - | - | (564,171) |
| Stock split (5 for 1) | 30,512,664 | (72,467) | 72,467 | - | - | - | - | - |
| Common stock issued in connection with merger | 3,397,802 | 340 | (340) | - | - | - | - | - |
| Common stock issued for cash | 4,175,000 | 417 | 8,349,565 | - | - | - | - | 8,349,982 |
| Common stock issued on conversion of convertible debt | 650,000 | 65 | 1,299,935 | - | - | - | - | 1,300,000 |
| Exercise of stock options | 40,000 | 4 | 9,596 | - | - | - | - | 9,600 |
| Common stock issued in exchange for services | 7,000 | 1 | 21,876 | - | - | - | - | 21,877 |
| Beneficial conversion feature | - | - | 1,625,000 | - | - | - | - | 1,625,000 |
| Stock based compensation | - | - | 436,748 | - | - | - | - | 436,748 |
| Net loss | - | - | - | (6,349,540) | - | - | - | (6,349,540) |
| Balances at, December 31, 2005 | 46,410,632 | 4,641 | 19,029,178 | (14,204,323) | - | - | - | 4,829,496 |

(See accompanying notes to financial statements.)

**REXAHN PHARMACEUTICALS, INC.**
(A Development Stage Company)
Statements of Stockholders' Equity (Deficit) and Comprehensive Loss (Continued)
Period from March 19, 2001 (Inception) to December 31, 2011

| | Common Stock | | Additional | Accumulated Deficit During the | Treasury Stock | | Accumulated Other | Total Stockholders' |
|---|---|---|---|---|---|---|---|---|
| | Number of shares | Amount | Paid-in Capital | Development Stage | Number of shares | Amount | Comprehensive Loss | Equity (Deficit) |
| Balances at, December 31, 2005 | 46,410,632 | 4,641 | 19,029,178 | (14,204,323) | - | - | - | 4,829,496 |
| Exercise of stock options | 61,705 | 6 | 14,802 | - | - | - | - | 14,808 |
| Common stock issued on conversion of convertible debt | 3,850,000 | 385 | 3,849,615 | - | - | - | - | 3,850,000 |
| Purchase of treasury stock | - | | - | - | 14,205 | (28,410) | - | (28,410) |
| Stock based compensation | - | | 1,033,956 | - | - | - | - | 1,033,956 |
| Net loss | - | | - | (6,486,003) | - | - | - | (6,486,003) |
| Balances at December 31, 2006 | 50,322,337 | 5,032 | 23,927,551 | (20,690,326) | 14,205 | (28,410) | - | 3,213,847 |
| Common stock issued, as restated | 4,857,159 | 486 | 1,144,219 | - | - | - | - | 1,144,705 |
| Stock options exercised | 127,500 | 12 | 59,988 | - | - | - | - | 60,000 |
| Stock based compensation | - | - | 1,121,646 | - | - | - | - | 1,121,646 |
| Stock issuance costs | - | - | (139,674) | - | - | - | - | (139,674) |
| Net loss, as restated | - | - | - | (4,442,331) | - | - | - | (4,442,331) |
| Balances at December 31, 2007, as restated | 55,306,996 | 5,530 | 26,113,730 | (25,132,657) | 14,205 | (28,410) | - | 958,193 |
| Common stock issued, as restated | 642,858 | 65 | 155,450 | - | - | - | - | 155,515 |
| Stock options exercised | 90,000 | 9 | 31,191 | - | - | - | - | 31,200 |
| Stock based compensation | - | - | 484,684 | - | - | - | - | 484,684 |
| Net loss, as restated | - | - | - | (3,681,801) | - | - | - | (3,681,801) |
| Unrealized loss on securities available-for – sale | - | - | - | - | - | - | (550,480) | (550,480) |
| Total Comprehensive Loss | | | | | | | | (4,232,281) |
| Balances at December 31, 2008 | 56,039,854 | 5,604 | 26,785,055 | (28,814,458) | 14,205 | (28,410) | (550,480) | (2,602,689) |

(See accompanying notes to financial statements.)

**REXAHN PHARMACEUTICALS, INC.**
(A Development Stage Company)
Statements of Stockholders' Equity (Deficit) and Comprehensive Loss (Continued)
Period from March 19, 2001 (Inception) to December 31, 2011

| | Common Stock | | Additional | Accumulated Deficit During the | Treasury Stock | | Accumulated Other | |
|---|---|---|---|---|---|---|---|---|
| | Number of shares | Amount | Paid-in Capital | Development Stage | Number of shares | Amount | Comprehensive Loss | Equity (Deficit) |
| Balances at December 31, 2008 | 56,039,854 | 5,604 | 26,785,055 | (28,814,458) | 14,205 | (28,410) | (550,480) | (2,602,689) |
| Issuance of common stock and units | 15,883,847 | 1,588 | 9,996,015 | - | - | - | - | 9,997,603 |
| Stock options exercised | 15,000 | 2 | 3,600 | - | - | - | - | 3,602 |
| Stock issuance costs | - | - | (641,018) | - | - | - | - | (641,018) |
| Stock based compensation | - | - | 497,531 | - | - | - | - | 497,531 |
| Net loss | - | - | - | (2,903,098) | - | - | - | (2,903,098) |
| –Reversal of unrealized loss on securities available-for-sale | - | - | - | - | - | - | 550,480 | 550,480 |
| Total Comprehensive Loss | | | | | | | | (2,352,618) |
| Balances at December 31, 2009 | 71,938,701 | 7,194 | 36,641,183 | (31,717,556) | 14,205 | (28,410) | - | 4,902,411 |
| Issuance of common stock and units | 6,666,667 | 667 | 8,198,534 | - | - | - | - | 8,199,201 |
| Stock issuance costs | - | - | (681,773) | - | - | - | - | (681,773) |
| Common stock issued in exchange for services | 1,700,000 | 170 | 2,107,830 | - | - | - | - | 2,108,000 |
| Stock options exercised | 155,500 | 16 | 107,224 | - | - | - | - | 107,240 |
| Stock warrants exercised | 3,714,186 | 371 | 9,199,797 | - | - | - | - | 9,200,168 |
| Stock based compensation | - | - | 584,657 | - | - | - | - | 584,657 |
| Net loss | - | - | - | (14,022,107) | - | - | - | (14,022,107) |
| Unrealized loss on securities available-for - sale | - | - | - | - | - | - | (2,340) | (2,340) |
| Total Comprehensive Loss | | | | | | | | (14,024,447) |
| Balances at December 31, 2010 | 84,175,054 | 8,418 | 56,157,452 | (45,739,663) | 14,205 | (28,410) | (2,340) | 10,395,457 |
| Issuance of common stock and units | 10,667,848 | 1,067 | 11,122,265 | | - | - | - | 11,123,332 |
| Stock issuance costs | - | - | (729,727) | | - | - | - | (729,727) |
| Stock options exercised | 183,000 | 18 | 59,222 | | - | - | - | 59,240 |
| Stock warrants exercised | 333,959 | 33 | 561,798 | | - | - | - | 561,831 |
| Stock based compensation | - | - | 638,607 | | - | - | - | 638,607 |
| Net loss | - | - | | (11,344,950) | - | - | - | (11,344,950) |
| Reversal of unrealized loss on securities available-for-sale | - | - | - | - | - | - | 2,340 | 2,340 |
| Total Comprehensive Loss | | | | | | | | (11,342,610) |
| **Balances at December 31, 2011** | 95,359,861 | $ 9,536 | $ 67,809,617 | $(57,084,613) | 14,205 | $ (28,410) | $ - | $ 10,706,130 |

(See accompanying notes to financial statements.)

**REXAHN PHARMACEUTICALS, INC.**
(A Development Stage Company)
Statement of Cash Flows

| | For the Year Ended December 31, | | | Cumulative From March 19, 2001 (Inception) to December 31, |
|---|---|---|---|---|
| **Cash Flows from Operating Activities:** | **2011** | 2010 | 2009 | 2011 |
| Net loss | **$ (11,344,950)** | **$ (14,022,107)** | $ (2,903,098) | $ (57,084,613) |
| Adjustments to reconcile net loss to net cash used in operating activities: | | | | |
| Beneficial conversion feature | **-** | **-** | - | 1,625,000 |
| Compensatory stock | **-** | **2,108,000** | - | 2,129,877 |
| Depreciation and amortization | **45,070** | **50,659** | 41,604 | 640,537 |
| Stock based compensation | **638,607** | **584,657** | 497,531 | 5,577,629 |
| Amortization of deferred research and development arrangement | **(75,000)** | **(75,000)** | (75,000) | (675,000) |
| Note receivable | **28,023** | **(46,705)** | - | (18,682) |
| Realized loss (gain) on marketable securities | **3,960** | **-** | (11,025) | 13,301 |
| Amortization of deferred lease incentive | **(20,000)** | **(20,000)** | (10,000) | (50,000) |
| Unrealized (gain) loss on fair value of warrants | **(4,778,450)** | **3,823,146** | (1,793,101) | (3,676,105) |
| Unrealized gain on fair value of put feature on common stock | **-** | **(97,713)** | (1,915,179) | (2,315,539) |
| Financing expense | **97,667** | **180,080** | 223,950 | 640,023 |
| Deferred lease expenses | **(8,729)** | **24,616** | 38,501 | 54,388 |
| Loss on impairment of intangible assets | **-** | **-** | 286,132 | 286,132 |
| Changes in assets and liabilities: | | | | |
| Prepaid expenses and other current assets | **373,478** | **(385,714)** | 45,830 | (333,171) |
| Research tax credit receivable | **145,513** | **(145,513)** | - | - |
| Accounts payable and accrued expenses | **(635,495)** | **1,034,996** | 427,010 | 1,185,405 |
| **Net Cash Used in Operating Activities** | **(15,530,306)** | **(6,986,598)** | (5,146,845) | (52,000,818) |

(See accompanying notes to financial statements.)

**REXAHN PHARMACEUTICALS, INC.**
(A Development Stage Company)
Statement of Cash Flows (Continued)

| | For the Year Ended December 31, | | | Cumulative From March 19, 2001 (Inception) to December 31, |
|---|---|---|---|---|
| | **2011** | 2010 | 2009 | 2011 |
| **Cash Flows from Investing Activities:** | | | | |
| Restricted cash equivalents | **(1,029,872)** | 1,624,167 | (2,026,060) | (1,431,765) |
| Purchase of equipment | **(16,047)** | (5,246) | (18,370) | (564,995) |
| Purchase of marketable securities | **(8,000,000)** | (2,353,960) | (1,371,824) | (21,123,960) |
| Proceeds from sales of marketable securities | **8,500,000** | 75,000 | 4,758,079 | 19,160,659 |
| Payment of licensing fees | **-** | - | - | (356,216) |
| **Net Cash (Used in) Provided by Investing Activities** | **(545,919)** | (660,039) | 1,341,825 | (4,316,277) |
| **Cash Flows from Financing Activities:** | | | | |
| Issuance of common stock and units, net of issuance costs | **13,220,273** | 9,318,228 | 10,730,320 | 55,805,574 |
| Proceeds from exercise of stock options | **59,240** | 107,240 | 3,602 | 170,082 |
| Proceeds from exercise of stock warrants | **317,961** | 3,263,376 | - | 3,581,337 |
| Proceeds from long-term debt | **-** | - | - | 5,150,000 |
| Proceeds from research contribution | **-** | - | - | 1,500,000 |
| Purchase of treasury stock | **-** | - | - | (28,410) |
| **Net Cash Provided by Financing Activities** | **13,597,474** | 12,688,844 | 10,733,922 | 66,178,583 |
| **Net (Decrease) Increase in Cash and Cash Equivalents** | **(2,478,751)** | 5,042,207 | 6,928,902 | 9,861,488 |
| **Cash and Cash Equivalents - beginning of period** | **12,340,239** | 7,298,032 | 369,130 | - |
| **Cash and Cash Equivalents - end of period** | **$ 9,861,488** | $ 12,340,239 | $ 7,298,032 | $ 9,861,488 |

(See accompanying notes to financial statements.)

**REXAHN PHARMACEUTICALS, INC.**
(A Development Stage Company)
Statement of Cash Flows (Continued)

| | For the Year Ended December 31, | | | Cumulative From March 19, 2001 (Inception) to December 31, |
|---|---|---|---|---|
| | **2011** | 2010 | 2009 | 2011 |
| **Supplemental Cash Flow Information** | | | | |
| Interest paid | **$ -** | $ - | $ - | $ 301,147 |
| Non-cash financing and investing | | | | |
| Warrants issued | **$ 2,924,333** | $ 1,980,880 | $ 4,565,821 | $ 11,054,427 |
| Put feature on common stock issued | **$ -** | $ - | $ - | $ 4,954,738 |
| Dilutive issuances of common stock | **$ -** | $ - | $ 2,639,199 | $ 2,639,199 |
| Warrant liability extinguishment from exercise of warrants | **$ 243,868** | $ 5,936,792 | $ - | $ 6,180,660 |
| Leasehold improvement incentive | **$ -** | $ - | $ 100,000 | $ 100,000 |
| Settlement of lawsuit | **$ -** | $ 43,953 | $ - | $ 43,953 |

(See accompanying notes to financial statements.)

## 1. Operations and Organization

### Operations and Organization

Rexahn Pharmaceuticals, Inc. (the "Company" or "Rexahn Pharmaceuticals"), a Delaware corporation, is a development stage biopharmaceutical company dedicated to the discovery, development and commercialization of innovative treatments for cancer, central nervous system ("CNS") disorders, sexual dysfunction and other medical needs. The Company has not yet generated commercial sales revenue and has been able to fund its operating losses to date through the sale of its common stock, warrants, issuance of long-term debt, and proceeds from reimbursed research and development costs. The Company believes that its existing cash and cash equivalents and marketable securities will be sufficient to cover its cash flow requirements for 2012. Management has the capability of managing the Company's operations within existing cash and marketable securities available by focusing on core research and development activities. This may result in slowing down clinical studies, but will conserve the Company's cash to allow it to operate for the next twelve months.

### Reverse Merger Acquisition

Pursuant to an Agreement and Plan of Merger by and among Rexahn, Corp ("Rexahn"), Corporate Road Show.Com Inc. ("CRS"), a New York corporation and predecessor corporation of the Company, CRS Merger Sub, Inc., a Delaware corporation and wholly owned subsidiary of CRS ("Merger Sub"), CRS Delaware, Inc., a Delaware corporation and wholly owned subsidiary of CRS, immediately after giving effect to a 1-for-100 reverse stock split and the reincorporation of CRS as a Delaware corporation under the name Rexahn Pharmaceuticals, Inc. ("Rexahn Pharmaceuticals"), on May 13, 2005, Merger Sub merged with and into Rexahn, with Rexahn surviving as a wholly owned subsidiary of Rexahn Pharmaceuticals (the "Acquisition Merger"). In the Acquisition Merger, (i) each share of the issued and outstanding common stock of Rexahn (other than dissenting shares) was converted into the right to receive five shares of Rexahn Pharmaceuticals common stock; and (ii) each issued, outstanding and unexercised option to purchase a share of Rexahn common stock was converted into an option to purchase five shares of Rexahn Pharmaceuticals common stock.

Shares of Rexahn Pharmaceuticals common stock issued in the Acquisition Merger were exempt from the registration requirements of the Securities Act of 1933, as amended (the "Securities Act"), pursuant to Regulation D under the Securities Act and/or Regulation S under the Securities Act. These shares of Rexahn Pharmaceuticals common stock are deemed "restricted securities" and bear an appropriate restrictive legend indicating that the resale of such shares may be made only pursuant to registration under the Securities Act or pursuant to an available exemption from such registration.

For accounting purposes, the Acquisition Merger was accounted for as a reverse acquisition of CRS (legal acquirer) by Rexahn (accounting acquirer). As a result, following the Acquisition Merger, the historical financial statements of Rexahn became the historical financial statements of the Company.

### Merger of Subsidiary

On September 29, 2005, the Company's wholly owned subsidiary, Rexahn, was merged with and into the Company and Rexahn's separate existence was terminated.

## 2. Prior Period Effect of 2009 Restatement

As disclosed in the Company's 2010 Annual Report on Form 10-K, Management restated the Company's financial statements to reflect a prior period adjustment effective January 1, 2009, which resulted in a decrease to additional paid-in capital of $6,399,805, an increase of the accumulated deficit of $1,092,021, and an increase in warrant and put feature on common stock liabilities of $5,307,784. Management had determined that the warrants and anti-dilution make whole provisions, as described in Notes 13 and 14, respectively, issued to investors from offerings occurring in December 2007 and March, 2008, were misclassified as equity, and should have been treated as liabilities at inception.

The Company has recorded this adjustment for the years ended December 31, 2008 and 2007 on the Statement of Stockholders' Equity (Deficit) and Comprehensive Loss, as follows:

| | For the Year Ended December 31, | | Total |
|---|---|---|---|
| | 2008 | 2007 | |
| Common stock issued-adjustment to Additional paid in capital | | | |
| As originally reported | $ 899,936 | $ 6,799,538 | |
| Effect of restatement | (744,486) | (5,655,319) | (6,399,805) |
| As restated | 155,450 | 1,144,219 | |
| | | | |
| Net loss-adjustment to Accumulated deficit during the development stage | | | |
| As originally reported | (4,912,148) | (4,304,005) | |
| Effect of restatement | 1,230,347 | (138,326) | 1,092,021 |
| As restated | (3,681,801) | (4,442,331) | |

## 3. Summary of Significant Accounting Policies

a) Cash and Cash Equivalents

Cash and cash equivalents include cash on hand and short-term investments purchased with remaining maturities of three months or less at acquisition.

b) Marketable Securities

Marketable securities are considered "available-for-sale" in accordance with Financial Statement Accounting Board ("FASB") Accounting Standard Codification ("ASC") 320, "Debt and Equity Securities", and thus are reported at fair value in our accompanying balance sheet, with unrealized gains and losses excluded from earnings and reported as a separate component of stockholders' equity. Realized gains and losses are accounted for on the basis of specific identification and are included in other income or expense in the statement of operations. The Company classifies such investments as current on the balance sheet as the investments are readily marketable and available for use in our current operations. Accumulated other comprehensive loss at December 31, 2011 and 2010 was $0 and $2,340 respectively. The Company's total comprehensive loss was $11,342,610, $14,024,447 and $2,352,618 for the years ended December 31, 2011, 2010 and 2009, respectively.

c) Equipment

Equipment is stated at cost less accumulated depreciation. Depreciation, based on the lesser of the term of the lease or the estimated useful life of the assets, is provided as follows:

| | Life | Depreciation Method |
|---|---|---|
| Furniture and fixtures | 7 years | straight line |
| Office equipment | 5 years | straight line |
| Lab equipment | 5-7 years | straight line |
| Computer equipment | 5 years | straight line |
| Leasehold improvements | 3-5 years | straight line |

During the year ended December 31, 2010, the Company changed the depreciation method for furniture and fixtures, office equipment, and lab equipment from double declining balance to straight line as it concluded that the straight line method matched the expense throughout the useful lives of the assets. The Company determined that the impact of the change in depreciation method was immaterial.

d) Research and Development

Research and development costs are expensed as incurred. Research and development expenses consist primarily of third party service costs under research and development agreements, salaries and related personnel costs, as well as stock compensation related to these costs, costs to acquire pharmaceutical products and product rights for development and amounts paid to contract research organizations, hospitals and laboratories for the provision of services and materials for drug development and clinical trials.

Costs incurred in obtaining the licensing rights to technology in the research and development stage that have no alternative future uses and are for unapproved product compounds are expensed as incurred.

## 3. Summary of Significant Accounting Policies (cont'd)

e) Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and 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. These estimates are based on management's best knowledge of current events and actions the Company may undertake in the future. Actual results may ultimately differ from those estimates. These estimates are reviewed periodically and as adjustments become necessary, they are reported in earnings in the period in which they become available.

f) Fair Value of Financial Instruments

The carrying amounts reported in the accompanying financial statements for cash and cash equivalents, note receivable, prepaid expenses and other current assets and accounts payable and accrued expenses approximate fair value because of the short-term maturity of these financial instruments. The fair values for marketable securities, warrant liabilities and the put feature on common stock is discussed in Notes 4, 13, and 14, respectively.

g) Income Taxes

The Company accounts for income taxes in accordance with ASC 740, "Income Taxes". Deferred tax assets and liabilities are recorded for differences between the financial statement and tax basis of the assets and liabilities that will result in taxable or deductible amounts in the future based on enacted tax laws and rates. ASC 740 requires that a valuation allowance be established when it is more likely than not that all portions of a deferred tax asset will not be realized. A review of all positive and negative evidence needs to be considered, including a company's current and past performance, the market environment in which the company operates, length of carryback and carryforward periods and existing contracts that will result in future profits. Income tax expense is recorded for the amount of income tax payable or refundable for the period, increased or decreased by the change in deferred tax assets and liabilities during the period.

As a result of the Company's significant cumulative losses, we determined that it was appropriate to establish a valuation allowance for the full amount of our deferred tax assets.

The calculation of our tax liabilities involves the inherent uncertainty associated with the application of complex tax laws. We are subject to examination by various taxing authorities. We believe that as a result of our loss carryforward sustained to date, any examination would result in a reduction of our net operating losses rather than a tax liability. As such, we have not provided for additional taxes estimated under ASC 740.

## 3. Summary of Significant Accounting Policies (cont'd)

h) Loss Per Share

The Company accounts for loss per share pursuant to ASC 260, "Earnings per Share", which requires disclosure on the financial statements of "basic" and "diluted" loss per share. Basic loss per share is computed by dividing net loss by the weighted average number of common shares outstanding for the year. Diluted loss per share is computed by dividing net loss by the weighted average number of common shares outstanding plus potentially dilutive securities outstanding for each year. Potentially dilutive securities include stock options and warrants. Diluted loss per share for the years ended December 31, 2011, 2010 and 2009 is the same as basic loss per share due to the fact that the Company incurred losses for all periods presented and the inclusion of common share equivalents would be antidilutive. The following securities, presented on a common share equivalent basis, have been excluded from the per share computations:

| | Year Ended December 31 | | |
|---|---|---|---|
| | 2011 | 2010 | 2009 |
| Stock Options | 7,646,795 | 8,076,795 | 7,715,795 |
| Warrants | 8,676,142 | 5,624,583 | 8,575,243 |

i) Stock-Based Compensation

In accordance with ASC 718, "Stock Compensation," compensation costs related to share-based payment transactions, including employee stock options, are to be recognized in the financial statements. In addition, the Company adheres to the guidance set forth within Securities and Exchange Commission ("SEC") Staff Accounting Bulletin ("SAB") No. 107, which provides the Staff's views regarding the interaction between ASC 718 and certain SEC rules and regulations, and provides interpretations with respect to the valuation of share-based payments for public companies.

j) Impairment of Long-Lived Assets

In accordance with ASC 360, "Property, Plant and Equipment," long-lived assets to be held and used are analyzed for impairment whenever events or changes in circumstances indicate that the related carrying amounts may not be recoverable. The Company evaluates at each balance sheet date whether events and circumstances have occurred that indicate possible impairment. If there are indications of impairment, the Company uses future undiscounted cash flows of the related asset or asset grouping over the remaining life in measuring whether the assets are recoverable. In the event such cash flows are not expected to be sufficient to recover the recorded asset values, the assets are written down to their estimated fair value. Management determined that an impairment of intangible assets occurred in 2009 and wrote-off the assets remaining carrying value of $286,132, which is reflected in research and development expenses in the Company's Statement of Operations for the year ended December 31, 2009.

## 3. Summary of Significant Accounting Policies (cont'd)

k) Concentration of Credit Risk

The Company does not have significant off-balance sheet risk or credit concentration. The Company maintains cash and short-term investments with major financial institutions. From time to time the Company has funds on deposit with commercial banks that exceed federally insured limits. The balances are insured by either the Federal Deposit Insurance Corporation or the Securities Investor Protection Corporation up to $250,000. At December 31, 2011, the Company's uninsured cash balance was $10,543,447.

l) Reclassification

The Company has reclassified previously reported amortization of Rexgene's research and development arrangement, as disclosed in Note 9, "Deferred Research and Development Arrangement", from revenue to a reduction in research and development expenses in the statement of operations. The reclassification had no effect on the Company's balance sheets, net loss, or cash flows from operations.

m) Recent Accounting Pronouncements Affecting the Company

*Fair Value Measurements*

In May 2011, the FASB issued Accounting Standards Update 2011-04 to ASC 820, "Fair Value Measurements and Disclosures" ("ASC 820") which amends the disclosure requirements for fair value instruments. The new disclosures required include disclosure regarding the sensitivity of the fair value measurement to changes in unobservable inputs, and the interrelationships between those unobservable inputs. The guidance is effective for the Company for fiscal years and interim periods beginning on or after December 15, 2011. Management currently believes that the adoption of this guidance will not have a material impact on the Company's financial statements.

*Comprehensive Income*

In June 2011, the FASB issued authoritative guidance for presentation and disclosure of comprehensive income in the financial statements. Under the new guidance, a company may no longer present the components of other comprehensive income as part of the statement of changes in the statement of stockholders' equity, and instead must present the components of comprehensive income either in the statement of operations or in a separate statement immediately following the Statement of Operations. In addition, reclassification adjustments between comprehensive income and net income must be disclosed on the financial statements. This guidance is effective for the Company for fiscal years and interim periods beginning on or after December 15, 2011. Management currently believes that the adoption of this guidance will not have a material impact on the Company's financial statements.

## 4. Marketable Securities

Cost and fair value of the Company's marketable securities are as follows:

| **Securities available-for-sale** | Cost Basis | Gross Unrealized Losses | Fair Value |
|---|---|---|---|
| **December 31, 2011:** | | | |
| State and municipal obligations | **$ 1,950,000** | **$ -** | **$ 1,950,000** |
| December 31, 2010: | | | |
| State and municipal obligations | $ 2,453,960 | $ (2,340) | $ 2,451,620 |

Amortized cost and fair value at December 31, 2011 by contractual maturity are shown below. Expected maturities will differ from contractual maturities because the Company may redeem certain securities at par.

| **Maturity** | Cost Basis | Fair Value |
|---|---|---|
| 10 years or more | $ 1,950,000 | $ 1,950,000 |

## 5. Prepaid Expenses and Other Current Assets

| | **December 31, 2011** | December 31, 2010 |
|---|---|---|
| Deposits on contracts | **$ 163,317** | $ 564,074 |
| Other assets | **169,854** | 142,575 |
| | **$ 333,171** | $ 706,649 |

Deposits on contracts consist of deposits on research and development contracts for services that have not yet been incurred. Other assets include prepaid general and administrative expenses such as insurance, rent, and consulting services.

## 6. Note Receivable

On June 16, 2010, Amarex, LLC ("Amarex") executed a note payable to the Company in settlement of a contract dispute. The Company settled the case with Amarex for $100,000 less a balance owed of $43,953. The principal sum of the note was $56,047, and is included in other income in the Company's statement of operations. Monthly payments of $2,335 began on September 1, 2010 and will continue until August 1, 2012 at which time the balance is expected to be paid in full. The note does not bear interest. Pursuant to the note, Amarex shall pay a late charge of five percent (5%) of any past due installment payments if any installment payment is not paid within 10 days of its due date. As of December 31, 2011, all payments were made as scheduled.

As of December 31, 2011, the principal amortization of the note is shown below:

| **Principal Amortization** | Expected Payment |
|---|---|
| Within 1 year | $ 18,682 |

## 7. Equipment, Net

| | **December 31, 2011** | December 31, 2010 |
|---|---|---|
| Furniture and fixtures | **$ 34,200** | $ 32,169 |
| Office equipment | **81,074** | 77,032 |
| Lab and computer equipment | **430,261** | 429,415 |
| Leasehold improvements | **119,841** | 110,713 |
| | **665,376** | 649,329 |
| Less Accumulated depreciation | **(570,834)** | (525,764) |
| Net carrying amount | **$ 94,542** | $ 123,565 |

Depreciation expense was $45,070, $50,659 and $41,604 for the years ended December 31, 2011, 2010 and 2009, respectively.

## 8. Accounts Payable and Accrued Expenses

| | **December 31, 2011** | December 31, 2010 |
|---|---|---|
| Trade payables | **$ 555,613** | $ 489,527 |
| Accrued expenses | **50,401** | 18,466 |
| Accrued research and development contract costs | **449,775** | 1,239,233 |
| Payroll liabilities | **129,616** | 73,674 |
| | **$ 1,185,405** | $ 1,820,900 |

## 9. Deferred Research and Development Arrangement

In 2003, the Company entered into a collaborative research agreement with Rexgene Biotech Co., Ltd. ("Rexgene"), a shareholder. Rexgene is engaged in the development of pharmaceutical products in Asia and has agreed to assist the Company with the research, development and clinical trials necessary for registration of the Company's drug candidate, Archexin, in Asia. This agreement provides Rexgene with exclusive rights to license, sublicense, make, have made, use, sell and import Archexin in Asia. In accordance with the agreement, Rexgene paid the Company a one-time fee of $1,500,000 in 2003. The agreement terminates at the later of 20 years or the term of the patent. The amortization reduces research and development expenses for the periods presented.

The Company is using 20 years as its basis for recognition and accordingly $75,000 was reduced from research and development expenses for the years ended December 31, 2011, 2010 and 2009. The remaining $825,000 and $900,000 at December 31, 2011 and 2010, respectively, is reflected as deferred research and development arrangement on the balance sheet. The contribution is being used in the cooperative funding of the costs of development of Archexin. Royalties of 3% of net sales of licensed products will become payable to the Company on a quarterly basis once commercial sales of Archexin begin. The product is still under development and commercial sales are not expected to begin until at least 2013. Under the terms of the agreement, Rexgene does not receive royalties on the Company net sales outside Asia.

## 10. Other Liabilities

Deferred Lease Incentive

On June 29, 2009, the Company entered into a five year office lease agreement as discussed in note 16. The lessor agreed to grant a leasehold improvement allowance of $100,000 to the Company to be used for the construction cost of improvements, architectural and engineering fees, government agency plan check, permit and other fees, sales and use taxes, testing and inspection costs, construction fees and telephone and data cabling and wiring in the premises. The full amount of leasehold improvement allowance had been used up by the Company by December 31, 2009. The Company accounts for the benefit of the leasehold improvement allowance on a straight line basis as a reduction of rental expense over the 5 year lease term.

The following table sets forth the deferred lease incentive:

| | **December 31, 2011** | December 31, 2010 |
|---|---|---|
| Deferred lease incentive | **$ 100,000** | $ 100,000 |
| Less accumulated amortization | **(50,000)** | (30,000) |
| Balance | **$ 50,000** | **$** 70,000 |

Deferred Office Lease Expense

The office lease agreement, discussed above, requires an initial annual base rent of $76,524 with annual increases over the next five years. The Company recognizes rental expense on a straight-line basis over the term of the lease, which resulted in a deferred rent liability of $54,388 and $63,117 as of December 31, 2011, and 2010, respectively.

**11. Common Stock**

The following transactions occurred from March 19, 2001 (inception) to December 31, 2011:

a) On May 10, 2001 the Company issued 3,600,000 shares of common stock to the Company's founders for $1.

b) On August 10, 2001 the Company issued:

i) 1,208,332 shares of common stock to the directors of the Company for cash of $1,450,000.

ii) 958,334 shares of common stock to Rexgene for cash of $550,000.

iii) 360,000 shares of common stock in a private placement to individual investors for cash of $1,080,000.

These share purchases were negotiated by the parties at various dates prior to the August 10, 2001 share issuance date.

c) On October 10, 2001 the Company issued 400,000 shares of common stock to Chong Kun Dang Pharmaceutical Corp. ("CKD") for cash of $479,991 and 400,000 shares of common stock to an individual investor for cash of $479,991.

d) On October 10, 2001 the Company issued 200,000 shares of common stock to CKD for cash of $479,985.

e) Since inception, the Company's founders have transferred 800,000 shares of the common stock described in a) to officers and directors of the Company.

f) In July 2003, the shareholders described in b)(iii) and e) transferred an aggregate of 1,268,332 shares of common stock to a voting trust. The trust allows for the unified voting of the stock by the trustees. The appointed trustees are senior management of the Company who, together with their existing shares, control a majority of the voting power of the Company.

g) On August 20, 2003 the Company issued 500,000 shares of common stock to KT&G Corporation for cash of $2,000,000.

h) On October 29, 2004, an option holder exercised options to purchase shares of the Company's common stock for cash of $1,800 and the Company issued an aggregate of 1,500 shares.

**11. Common Stock** (cont'd)

i) Pursuant to the agreement and plan of merger which occurred on May 13, 2005, (i) each share of the issued and outstanding common stock of Rexahn, Corp ("Rexahn") (other than dissenting shares) was converted into the right to receive five shares of Rexahn Pharmaceuticals common stock; (ii) each issued, outstanding and unexercised option to purchase a share of Rexahn common stock was converted into an option to purchase five shares of Rexahn Pharmaceuticals common stock and (iii) the par value of Rexahn's common stock was adjusted to reflect the par value of Corporate Road Show Com Inc. ("CRS") common stock. In the acquisition merger, 289,780,000 CRS pre-reverse stock split shares were converted into 2,897,802 post-reverse stock split Rexahn Pharmaceuticals shares, and an additional 500,000 post-reverse stock split Rexahn Pharmaceuticals shares were issued to a former executive of CRS. All shares and earnings per share information have been retroactively restated in these financial statements.

j) On August 8, 2005, the Company issued, in a transaction exempt from registration under the Securities Act, 4,175,000 shares of common stock at a purchase price of $2.00 per share.

k) On October 3, 2005, the Company issued 7,000 shares of common stock for $21,877 and $7,500 cash in exchange for services.

l) On December 2, 2005, the holders of a convertible note, representing $1,300,000 aggregate principal amount, exercised their option to convert the entire principal amount of the note into the Company's common stock. Based on a $2.00 per share conversion price, the holders received an aggregate of 650,000 shares.

m) On December 27, 2005, option holders exercised options to purchase shares of the Company's common stock for cash of $9,600 and the Company issued an aggregate of 40,000 shares.

n) On February 22, 2006, an option holder exercised options to purchase shares of the Company's common stock for cash of $1,200 and the Company issued an aggregate of 5,000 shares.

o) On April 12, 2006, an option holder exercised options to purchase shares of the Company's common stock for cash of $3,409 and the Company issued an aggregate of 14,205 shares. On the same date, the Company agreed to repurchase common stock from the option holder based on the then market price for treasury in exchange for the aggregate purchase price of $28,410 in cash.

p) On May 13, 2006, holders of the $3,850,000 convertible notes issued on February 28, 2005, exercised their rights to convert the entire principal amount of the notes into shares of the Company's common stock. Based on a $1.00 per share conversion price, the Company issued 3,850,000 shares of common stock in connection with the conversion.

q) On October 9, 2006, an option holder exercised options to purchase shares of the Company's common stock for cash of $2,400 and the Company issued an aggregate of 10,000 shares.

r) On November 19, 2006, an option holder exercised options to purchase shares of the Company's common stock for cash of $1,800 and the Company issued an aggregate of 7,500 shares.

**11. Common Stock** (cont'd)

s) On December 19, 2006, an option holder exercised options to purchase shares of the Company's common stock for cash of $6,000 and the Company issued an aggregate of 25,000 shares.

t) On April 18, 2007, an option holder exercised options to purchase shares of the Company's common stock for cash of $14,400 and the Company issued an aggregate of 18,000 shares.

u) On July 23, 2007, an option holder exercised options to purchase shares of the Company's common stock for cash of $12,000 and the Company issued an aggregate of 15,000 shares.

v) On September 27, 2007, an option holder exercised options to purchase shares of the Company's common stock for cash of $15,600 and the Company issued an aggregate of 19,500 shares.

w) On December 18, 2007, the Company issued 4,857,159 units at a price $1.40 per share for total gross proceeds of $6,800,023. Investors also were issued one warrant for every five shares purchased. One warrant will entitle the holder to purchase an additional share of common stock at a purchase price of $1.80 at any time over a period of three years from the date of the closing. The Company has recorded the warrants as liabilities at fair value as discussed in footnote 13. Private placement closing costs of $139,675 were recorded as a reduction of the issuance proceeds. Private placement costs also consist of 107,144 warrants, valued at $138,326, and were recorded as a financing expense. The Company extended anti-dilutive protection to the investors. The anti-dilution protection provision is structured in a way that is designed to protect a holder's position from being diluted and contains a price protection based on a mathematical calculation, and is recorded as a liability at fair value, as discussed in footnote 14. The Company revalues these liabilities each reporting period, with the unrealized gain (loss) recorded as other income (expense).

A summary of the allocation of the proceeds of the offering is shown below:

| | |
|---|---|
| Gross Proceeds: | $ 6,800,023 |
| Allocated to liabilities: | |
| Warrant liabilities | 1,392,476 |
| Put feature on common stock | 4,401,169 |
| Total allocated to liabilities | 5,793,645 |
| Allocated to equity: | |
| Common stock and additional paid-in capital | 1,144,704 |
| Allocated to expense: | |
| Financing expense | (138,326) |
| **Total allocated gross proceeds:** | $ 6,800,023 |

**11. Common Stock** (cont'd)

x) On December 27, 2007, an option holder exercised options to purchase shares of the Company's common stock for cash of $18,000 and the Company issued an aggregate of 75,000 shares.

y) On March 20, 2008, the Company issued 642,858 units consisting of one share of the Company's common stock and one warrant for every five common shares purchased in a private placement at a price of $1.40 per unit for total gross proceeds of $900,001. One warrant will entitle the holder to purchase an additional share of common stock at a price of $1.80 at any time over a period of three years from the date of the private placement, and is recorded as a liability at fair value. The Company extended anti-dilution protection to investors, and the provision is structured in a way that is designed to protect the holder's position from being diluted and contains a price based on a mathematical computation.

A summary of the allocation of the proceeds of the offering is shown below:

| | |
|---|---|
| Gross Proceeds: | $ 900,001 |
| Allocated to liabilities: | |
| Warrant liabilities | 190,917 |
| Put feature on common stock | 553,569 |
| Total allocated to liabilities | 744,486 |
| Allocated to common stock and additional paid-in capital | 155,515 |
| **Total allocated gross proceeds:** | $ 900,001 |

z) On May 30, 2008, an option holder exercised options to purchase shares of the Company's common stock for cash of $7,200 and the Company issued an aggregate of 30,000 shares.

aa) On June 2, 2008, an option holder exercised options to purchase shares of the Company's common stock for cash of $12,000 and the Company issued an aggregate of 50,000 shares.

ab) On June 30, 2008, an option holder exercised options to purchase shares of the Company's common stock for cash of $12,000 and the Company issued an aggregate of 10,000 shares.

**11. Common Stock** (cont'd)

ac) On June 5, 2009 the Company closed on a purchase agreement to issue 2,857,143 shares of common stock at a price of $1.05 per share to an institutional investor for total gross proceeds of $3,000,000 and incurred $289,090 of stock issuance costs. The investor was also issued:

4) Series I warrants to purchase 2,222,222 shares of common stock at a purchase price of $1.05 per share at any time before September 3, 2009;

5) Series II warrants to purchase 1,866,666 shares of common stock at a purchase price of $1.25 per share at any time from December 3, 2009 to June 5, 2012; and

6) Series III warrants to purchase 1,555,555 shares of common stock at a purchase price of $1.50 per share at any time from December 3, 2009 to June 5, 2014.

The closing costs included 142,857 warrants valued at $122,257 and were recorded as a financing expense. All warrants issued from this purchase agreement are recorded as liabilities at fair value.

The Company incurred a derivative loss upon issuance of these warrants, as the fair value of the warrants at inception was greater than the proceeds received from the investor. The derivative loss was combined with unrealized gains (losses) for the year ended December 31, 2009.

A summary of the allocation of the proceeds of the offering is shown below:

| | |
|---|---|
| Gross Proceeds: | $ 3,000,000 |
| Allocated to liabilities: | |
| Warrant liabilities | 3,451,194 |
| Allocated to equity: | |
| Common stock and additional paid-in capital | - |
| Allocated to expense: | |
| Financing expense | (122,257) |
| Derivative loss at inception | (328,937) |
| Total allocated to expense | (451,194) |
| **Total allocated gross proceeds:** | $ 3,000,000 |

ad) On June 9, 2009, the Company issued 1,833,341 shares of common stock and 862,246 warrants to purchase common stock at a purchase price of $1.05 per share to existing stockholders pursuant to the anti-dilution protection provisions of the private placements transacted on December 18, 2007 and March 20, 2008. The fair value of the additional warrants issued was approximately $422,300.

**11. Common Stock** (cont'd)

ae) On September 4, 2009, an option holder exercised options to purchase shares of the Company's common stock for cash of $3,600 and the Company issued an aggregate of 15,000 shares.

af) On September 21, 2009, the Company issued 3,102,837 shares of common stock at a purchase price of $1.13 per share to an institutional investor for net proceeds of $3,371,340, which includes $128,659 of stock issuance costs.

ag) On October 23, 2009, the Company closed on a purchase agreement to issue 6,072,383 shares of common stock at a price of $0.82 per share to five institutional investors for gross proceeds of $5,000,000, which includes $351,928 of stock issuance costs. The investors were also issued warrants to purchase 2,125,334 shares of common stock at a purchase price of $1.00 per share, exercisable on or after the date of delivery until the five-year anniversary, and were recorded as liabilities at fair value. The closing costs included 245,932 warrants valued at $101,693 and were recorded as a financing expense.

A summary of the allocation of the proceeds of the offering is shown below:

| | |
|---|---|
| Gross Proceeds: | $ 5,000,000 |
| Allocated to liabilities: | |
| Warrant liabilities | 1,114,627 |
| Allocated to equity: | |
| Common stock and additional paid-in capital | 3,987,066 |
| Allocated to expense: | |
| Financing expense | (101,693) |
| **Total allocated gross proceeds:** | $ 5,000,000 |

ah) On October 23, 2009, the Company issued 2,018,143 shares of common stock and 569,502 warrants to purchase common stock at a purchase price of $0.82 per share to existing stockholders pursuant to anti-dilution protection provisions of the private placements transacted on December 24, 2007 and March 20, 2008. The fair value of the additional warrants issued was of approximately $476,200.

**11. Common Stock** (cont'd)

ai) On February 12, 2010, the Company entered into two consulting agreements pursuant to which the Company issued 300,000 shares of common stock upon the execution of the agreements. Upon the extension of the term, 200,000 shares of common stock for each month will be issued until the termination of services.

The following table lists the issuances of shares by the Company under the consulting agreement:

| Date of Issuance | Number of Shares Issued | Market Value Per Share | Total Market Value of Share Issuance |
|---|---|---|---|
| February 12, 2010 | 300,000 | **$ 1.22** | $ 366,000 |
| May 24, 2010 | 200,000 | **1.40** | 280,000 |
| June 15, 2010 | 200,000 | **1.15** | 230,000 |
| August 2, 2010 | 400,000 | **1.37** | 548,000 |
| September 21, 2010 | 200,000 | **1.20** | 240,000 |
| October 21, 2010 | 200,000 | **1.16** | 232,000 |
| November 11, 2010 | 200,000 | **1.06** | 212,000 |
| Total | 1,700,000 | | $ 2,108,000 |

The market value of these shares was recorded as an expense and is reflected in general and administrative expenses in the Company's statement of operations. The agreements were terminated by the Company on November 11, 2010.

aj) In March 2010, warrant holders exercised warrants to purchase shares of the Company's common stock for cash of $1,297,001 and the Company issued an aggregate of 1,197,001 shares.

ak) In March 2010, option holders exercised options to purchase shares of the Company's common stock for cash of $21,240 and the Company issued an aggregate of 48,000 shares.

al) In April 2010, warrant holders exercised their warrants to purchase shares of the Company's common stock for cash of $1,966,375 and the Company issued an aggregate of 1,595,825 shares.

am) On April 20, 2010, an option holder exercised options to purchase shares of the Company's common stock for cash of $86,000 and the Company issued an aggregate of 107,500 shares.

an) In May 2010, warrant holders exercised 890,051 cashless warrants to obtain shares of the Company's common stock and the Company issued an aggregate of 547,674 shares.

**11. Common Stock** (cont'd)

ao) On June 30, 2010, the Company entered into a purchase agreement to issue 6,666,667 shares of common stock at a price of $1.50 per share to investors for gross proceeds of $10,000,000, which includes $681,773 of stock issuance costs. The investors were also issued warrants to purchase 2,000,000 shares of common stock at an exercise price of $1.90 per share. The warrants became immediately exercisable on the date of delivery until the four-year anniversary of the date of issuance. These warrants were valued at $1,800,800 and recorded as warrant liabilities. The closing costs included 200,000 warrants valued at $180,080 and were recorded as a financing expense.

| | |
|---|---|
| Gross Proceeds: | $ 10,000,000 |
| Allocated to liabilities: | |
| Warrant liabilities | 1,980,880 |
| Allocated to equity: | |
| Common stock and additional paid-in capital | 8,199,200 |
| Allocated to expense: | |
| Financing expense | (180,080) |
| **Total allocated gross proceeds:** | $ 10,000,000 |

ap) In November 2010, warrant holders exercised 936,883 cashless warrants to obtain shares of the Company's common stock and the Company issued an aggregate of 247,491 shares.

aq) In December 2010, warrant holders exercised 530,900 cashless warrants to obtain shares of the Company's common stock and the Company issued an aggregate of 126,195 shares.

ar) On January 19, 2011, the Company issued 2,334,515 shares of common stock at a purchase price of $1.69 per share to an institutional investor for net proceeds of $3,926,397, which includes $23,603 of stock issuance costs.

as) On February 15, 2011, a warrant holder exercised warrants to purchase shares of the Company's common stock for cash of $215,104 and the Company issued 209,042 shares.

at) On February 28, 2011, an option holder exercised options to purchase shares of the Company's common stock for cash of $6,000 and the Company issued 25,000 shares.

au) On March 11, 2011, an option holder exercised options to purchase shares of the Company's common stock for cash of $12,000 and the Company issued 50,000 shares.

av) On March 28, 2011, warrant holders exercised their warrants to purchase shares of the Company's common stock for cash of $102,857 and the Company issued 124,917 shares.

**11. Common Stock** (cont'd)

aw) On March 31, 2011, the Company closed on a purchase agreement to issue 8,333,333 shares of common stock at a price of $1.20 per share to five institutional investors for gross proceeds of $10,000,000, which includes $706,124 of cash stock issuance costs. The investors were also issued warrants to purchase 3,333,333 shares of common stock at a purchase price of $1.50 per share, exercisable on or after six months after the closing date until the five-year anniversary of the initial exercise date, and were recorded as liabilities at fair value. The closing costs included 208,333 warrants valued at $97,667 and were recorded as a financing expense.

A summary of the allocation of the proceeds of the offering is shown below:

| | |
|---|---|
| Gross Proceeds: | $ 10,000,000 |
| Allocated to liabilities: | |
| Warrant liabilities | 2,924,333 |
| Allocated to equity: | |
| Common stock and additional paid-in capital | 7,173,334 |
| Allocated to expense: | |
| Financing expense | (97,667) |
| **Total allocated gross proceeds:** | $ 10,000,000 |

ax) In September 2011, an option holder exercised options to purchase shares of the Company's common stock for cash of $22,040 and the Company issued 28,000 shares.

ay) In October 2011, an option holder exercised options to purchase shares of the Company's common stock for cash of $19,200 and the Company issued 80,000 shares.

## 12. Stock-Based Compensation

On August 5, 2003, the Company established a stock option plan (the "Plan"). Under the Plan, the Company grants stock options to key employees, directors and consultants of the Company. For all grants prior to September 12, 2005 and grants to employees of the Company after September 12, 2005, the vesting period is 30% on the first anniversary of the grant date, an additional 30% on the second anniversary and the remaining 40% on the third anniversary. Options expire between five and ten years from the date of grant.

For grants to non-employee consultants of the Company after September 12, 2005, the vesting period is between one to three years, subject to the fulfillment of certain conditions in the individual stock option grant agreements, or 100% upon the occurrence of certain events specified in the individual stock option grant agreements. Options authorized for issuance under the Plan total 17,000,000 after giving effect to an amendment to the Plan approved at the Annual Meeting of the Stockholders of the Company on June 2, 2006. At December 31, 2011, 8,673,000 shares of common stock were available for issuance.

Prior to adoption of the Plan, the Company made restricted stock grants. During 2003 all existing restricted stock grants were converted to stock options. The converted options maintained the same full vesting period as the original restricted stock grants.

**Accounting for Employee Awards**

The Company's results of operations for the years ended December 31, 2011, 2010 and 2009 include share-based employee compensation expense totaling $597,637, $470,366, and $565,150 respectively. Such amounts have been included in the Statement of Operations in general and administrative and research and development expenses. No income tax benefit has been recognized in the Statement of Operations for share-based compensation arrangements as the Company has provided for a 100% valuation allowance on its deferred tax assets.

Employee stock option compensation expense is the estimated fair value of options granted amortized on a straight-line basis over the requisite vesting service period for the entire portion of the award.

**Accounting for Non-Employee Awards**

Stock compensation expenses related to non-employee options were $40,970, $114,291 and $(67,619) for the years ended December 31, 2011, 2010 and 2009, respectively. Such amounts have been included in the Statement of Operations in general and administrative and research and development expenses.

## 12. Stock-Based Compensation (cont'd)

### Summary of Stock Compensation Expense Recognized

Total stock-based compensation recognized by the Company in the years ended December 31, 2011, 2010 and 2009, and the period from inception (March 19, 2001) to December 31, 2011, all of which relates to stock options is as follows:

| | Year Ended December 31, | | | Inception (March 19, 2001) to December 31 |
|---|---|---|---|---|
| | **2011** | 2010 | 2009 | 2011 |
| Statement of operations line item: | | | | |
| General and administrative: | | | | |
| Payroll | **$ 501,884** | $ 393,425 | $ 443,013 | $ 2,495,400 |
| Consulting and other professional fees | **26,566** | 93,581 | (67,644) | 786,523 |
| Research and development: | | | | |
| Payroll | **95,753** | 76,941 | 122,137 | 972,049 |
| Consulting and other professional fees | **14,404** | 20,710 | 25 | 1,323,657 |
| Total | **$ 638,607** | $ 584,657 | $ 497,531 | $ 5,577,629 |

### Summary of Stock Option Transactions

There were a total of 450,000 stock options granted with exercise prices ranging from $0.38-1.84, fair value on the grant date of $425,320 and a weighted average grant date fair value of $0.95 during the year ended December 31, 2011. There were a total of 725,000 stock options granted with exercise prices ranging from $1.17-$1.33, fair value on the date of grant of $616,000, and a weighted average grant date fair value of $0.85 during the year ended December 31, 2010. A total of 180,000 stock options were granted with exercise prices ranging from $0.73 - $1.28, grant date fair value of $134,917, and a weighted average grant date fair value of $0.75 during the year ended December 31, 2009. The fair value of options at the date of grant was estimated using the Black-Scholes option pricing model. The expected volatility is based upon historical volatility of the Company's stock. The expected term is based upon the simplified method as allowed under SAB 107.

## 12. Stock-Based Compensation (cont'd)

The assumptions made in calculating the fair values of options are as follows:

| | For the Year Ended December 31, | | |
|---|---|---|---|
| | **2011** | 2010 | 2009 |
| Black Scholes weighted average assumptions: | | | |
| Expected Dividend Yield | **0%** | 0% | 0% |
| Expected volatility | **96-101%** | 103-107% | 100-108% |
| Risk free interest rate | **0.11-2.29%** | 0.26-2.40% | 0.51-2.55% |
| Expected term (in years) | **5 Years** | 1-5 Years | 1-5 Years |

The following table summarizes the employee and non-employee share-based transactions:

| | **2011** | | 2010 | |
|---|---|---|---|---|
| | **Shares Subject to Options** | **Weighted Avg. Exercise Prices** | Shares Subject to Options | Weighted Avg. Exercise Prices |
| Outstanding at January 1 | **8,076,795** | **$ 1.01** | 7,715,795 | $ 0.98 |
| Granted | **450,000** | **$ 1.28** | 725,000 | $ 1.26 |
| Exercised | **(183,000)** | **$ 0.32** | (155,500) | $ 0.68 |
| Cancelled | **(697,000)** | **$ 0.91** | (208,500) | $ 1.19 |
| **Outstanding at December 31** | **7,646,795** | **$ 1.05** | 8,076,795 | $ 1.01 |

The following table summarizes information about stock options outstanding as of December 31, 2011 and 2010:

| | Shares Subject to Options | Weighted Avg. Exercise Prices | Weighted Average Remaining Contractual Term | Aggregate Intrinsic Value |
|---|---|---|---|---|
| **Outstanding at December 31, 2011** | **7,646,795** | **$ 1.05** | **4.8 years** | **$ 83,611** |
| **Exercisable at December 31, 2011** | **6,911,795** | **$ 1.02** | **4.4 years** | **$ 83,611** |
| Outstanding at December 31, 2010 | 8,076,795 | $ 1.01 | 5.4 years | $ 2,198,790 |
| Exercisable at December 31, 2010 | 6,762,795 | $ 1.00 | 4.8 years | $ 2,023,980 |

## 12. Stock-Based Compensation (cont'd)

The total intrinsic value of the options exercised was $163,450, $239,560 and $9,300, for the years ended December 31, 2011, 2010 and 2009, respectively. The weighted average fair value of the vested options was $0.70, $0.76 and $0.54 for the years ended December 31, 2011, 2010, and 2009, respectively.

A summary of the Company's unvested shares as of December 31, 2011 and changes during the year ended December 31, 2011 is presented below:

| | 2011 | |
|---|---|---|
| | **Subject to Options** | **Weighted Average Fair Value at Grant Date** |
| Unvested at January 1, 2011 | **1,314,000** | **$ 0.76** |
| Granted | **450,000** | **$ 0.95** |
| Vested | **(938,000)** | **$ 0.70** |
| Cancelled | **(91,000)** | **$ 0.89** |
| **Unvested at December 31, 2011** | **735,000** | **$ 0.92** |

As of December 31, 2011 and 2010, there was $397,593 and $685,636 of total unrecognized compensation cost, related to all unvested stock options, which is expected to be recognized over a weighted average vesting period of 1.6 years and 1.4 years, respectively.

## 13. Warrants

As at December 31, 2011, warrants to purchase 8,676,142 shares were outstanding, having exercise prices ranging from $1.00 to $1.90 and expiration dates ranging from August 8, 2013 and September 30, 2016.

| | **2011** | | 2010 | |
|---|---|---|---|---|
| | **Number of warrants** | **Weighted average exercise price** | Number of warrants | Weighted average exercise price |
| Balance at January 1 | **5,624,583** | **$ 1.48** | 8,575,243 | $ 1.10 |
| Issued during the period | **3,541,666** | **$ 1.50** | 2,200,000 | $ 1.90 |
| Exercised during the period | **(333,959)** | **$ 0.95** | (5,150,660) | $ 1.01 |
| Expired during the period | **(156,148)** | **$ 0.82** | - | $ - |
| **Balance at December 31** | **8,676,142** | **$ 1.53** | 5,624,583 | $ 1.48 |

At December 31, 2011 and 2010, the average remaining contractual life of the outstanding warrants was 3.2 years and 3.4 years, respectively.

The warrants, which were issued to investors in the December 2007, March 2008, May 2009, October 2009, June 2010 and March, 2011 offerings, contain a provision for net cash settlement in the event that there is a fundamental transaction (contractually defined as a merger, sale of substantially all assets, tender offer, or share exchange). If a fundamental transaction occurs in which the consideration issued consists principally of cash or stock in a non-public company, then the warrant holder has the option to receive cash, equal to the fair value of the remaining unexercised portion of the warrant. Due to this contingent redemption provision, the warrants require liability classification in accordance with ASC 480, "Distinguishing Liabilities from Equity," ("ASC 480") and are recorded at fair value. In addition, the warrants issued in the May 2009, October 2009, June 2010 and March, 2011 offerings contain a cashless exercise provision that is exercisable only in the event that a registration statement is not effective. This provision may not be operative if an effective registration statement is not available because of an exemption under the U.S. Securities laws may not be available to issue unregistered shares. As a result, net cash settlement may be required.

ASC 820 provides requirements for disclosure of liabilities that are measured at fair value on a recurring basis in periods subsequent to the initial recognition. Fair values for warrants are determined using the Binomial Lattice ("Lattice") valuation technique. The Lattice model provides for dynamic assumptions regarding volatility and risk-free interest rates within the total period to maturity. Accordingly, within the contractual term, the Company provided multiple date intervals over which multiple volatilities and risk free interest rates were used. These intervals allow the Lattice model to project outcomes along specific paths which consider volatilities and risk free rates that would be more likely in an early exercise scenario.

**13. Warrants** (cont'd)

Significant assumptions are determined as follows:

Trading market values—Published trading market values;
Exercise price—Stated exercise price;
Term—Remaining contractual term of the warrant;
Volatility—Historical trading volatility for periods consistent with the remaining terms;
Risk-free rate—Yields on zero coupon government securities with remaining terms consistent with the remaining terms of the warrants.

Due to the fundamental transaction provision, which could provide for early redemption of the warrants, the model also considered the probability the Company would enter into a fundamental transaction during the remaining term of the warrant. Since the Company is still in its development stage and is not yet achieving positive cash flow, management believes the probability of a fundamental transaction occurring over the term of the warrant is approximately 5%. For valuation purposes, the Company also assumed that if such a transaction did occur, it was more likely to occur towards the end of the term of the warrants.

The warrants issued in December 2007 and March 2008 are not only subject to traditional anti-dilution protection, such as stock splits and dividends, but they are also subject to down-round anti-dilution protection. Accordingly, if the Company sells common stock or common stock indexed financial instruments below the stated exercise price, the exercise price related to these warrants will adjust to that lower amount. The Lattice model used to value the warrants with down-round anti-dilution protection provides for multiple, probability-weighted scenarios at the stated exercise price and at five additional decrements/scenarios on each valuation date in order to encompass the value of the anti-dilution provisions in the estimate of fair value of the warrants. Calculations were performed at the stated exercise price and at five additional decrements/scenarios on each valuation date. The calculations provide for multiple, probability-weighted scenarios reflecting decrements that result from declines in the market prices. Decrements are predicated on the trading market prices in decreasing ranges below the contractual exercise price. For each valuation date, multiple Binomial Lattice calculations were performed which were probability weighted by considering both the Company's (i) historical market pricing trends, and (ii) an outlook for whether or not the Company may need to issue equity or equity-indexed instruments in the future with a price less than the current exercise price.

**13. Warrants** (cont'd)

The following table summarizes the fair value of the warrants as of the balance sheet date:

| | Fair Value as of: | | |
|---|---|---|---|
| Fair Values: | **December 31, 2011** | December 31, 2010 | Transaction Date |
| December 18, 2007 financing | **$ -** | $ - | $ 1,392,476 |
| March 20, 2008 financing | **-** | 123,558 | 190,917 |
| June 5, 2009 financing: | | | |
| Series I warrants | **-** | - | 707,111 |
| Series II warrants | **-** | - | 1,315,626 |
| Series III warrants | **89,756** | 751,022 | 1,306,200 |
| Warrants to placement agent | **8,893** | 69,032 | 122,257 |
| October 23, 2009 financing: | | | |
| Warrants to institutional investors | **129,221** | 694,377 | 1,012,934 |
| Warrants to placement agent | **714** | 111,241 | 101,693 |
| June 30, 2010 financing | | | |
| Warrants to institutional investors | **89,800** | 1,106,800 | 1,800,800 |
| Warrants to placement agent | **2,320** | 110,680 | 180,080 |
| March 31, 2011 financing: | | | |
| Warrants to institutional investors | **544,000** | - | 2,826,666 |
| Warrants to placement agent | **4,021** | - | 97,667 |
| **Total:** | **$ 868,725** | $ 2,966,710 | $ 11,054,427 |

The following table summarizes the number of shares indexed to the warrants as of the balance sheet date:

| | Number of Shares Indexed as of: | | |
|---|---|---|---|
| Number of Shares Indexed: | **December 31, 2011** | December 31, 2010 | Transaction Date |
| December 18, 2007 financing | **-** | - | 1,078,579 |
| March 20, 2008 financing | **-** | 281,065 | 128,572 |
| June 5, 2009 financing: | | | |
| Series I warrants | **-** | - | 2,222,222 |
| Series II warrants | **-** | - | 1,866,666 |
| Series III warrants | **1,555,555** | 1,555,555 | 1,555,555 |
| Warrants to placement agent | **132,143** | 132,143 | 142,857 |
| October 23, 2009 financing: | | | |
| Warrants to institutional investors | **1,228,333** | 1,228,333 | 2,125,334 |
| Warrants to placement agent | **18,445** | 227,487 | 245,932 |
| June 30, 2010 financing | | | |
| Warrants to institutional investors | **2,000,000** | 2,000,000 | 2,000,000 |
| Warrants to placement agent | **200,000** | 200,000 | 200,000 |
| March 31, 2011 financing: | | | |
| Warrants to institutional investors | **3,333,333** | - | 3,333,333 |
| Warrants to placement agent | **208,333** | - | 208,333 |
| **Total:** | **8,676,142** | 5,624,583 | 15,107,383 |

**13. Warrants** (cont'd)

The assumptions used in calculating the fair values of the warrants are as follows:

| December 18, 2007 financing: | **December 31, 2011** | December 31, 2010 | Transaction Date |
|---|---|---|---|
| Trading market prices | $ - | $ - | $ 1.75 |
| Estimated future volatility | - | - | 143% |
| Dividend | - | - | - |
| Estimated future risk-free rate | - | - | 3.27% |
| Equivalent volatility | - | - | 106% |
| Equivalent risk-free rate | - | - | 3.26% |
| Estimated additional shares to be issued upon dilutive event | - | - | 98,838 |

| March 20, 2008 financing: | **December 31, 2011** | December 31, 2010 | Transaction Date |
|---|---|---|---|
| Trading market prices | $ - | $ 1.12 | $ 2.14 |
| Estimated future volatility | - | 75% | 142% |
| Dividend | - | - | - |
| Estimated future risk-free rate | - | 0.47% | 1.95% |
| Equivalent volatility | - | 42% | 97% |
| Equivalent risk-free rate | - | 0.12% | 1.31% |
| Estimated additional shares to be issued upon dilutive event | - | 25,462 | 7,479 |

| June 5, 2009 financing: | **December 31, 2011** | December 31, 2010 | Transaction Date |
|---|---|---|---|
| Trading market prices | **$ 0.38** | $ 1.12 | $ 1.14 |
| Estimated future volatility | **98-100%** | 94-100% | 100% |
| Dividend | **-** | - | - |
| Estimated future risk-free rate | **0.38%** | 1.84-4.18% | 0.63-4.31% |
| Equivalent volatility | **80-81%** | 72-73% | 103-117% |
| Equivalent risk-free rate | **0.14%** | 0.52% | 0.20-1.44% |

| October 23, 2009 financing: | **December 31, 2011** | December 31, 2010 | Transaction Date |
|---|---|---|---|
| Trading market prices | **$ 0.38** | $ 1.12 | $ 0.69 |
| Estimated future volatility | **98-100%** | 100% | 100% |
| Dividend | **-** | - | - |
| Estimated future risk-free rate | **$ 0.38** | 1.84% | 2.63-3.80% |
| Equivalent volatility | **72-81%** | 65-74% | 98-99%% |
| Equivalent risk-free rate | **0.08-0.16%** | 0.38-0.58% | 0.93-1.16% |

**13. Warrants** (cont'd)

| June 30, 2010 financing: | **December 31, 2011** | December 31, 2010 | Transaction Date |
|---|---|---|---|
| Trading market prices | **$ 0.38** | $ 1.12 | $ 1.43 |
| Estimated future volatility | **86-100%** | 67% | 100% |
| Dividend | **-** | - | - |
| Estimated future risk-free rate | **0.38-0.58%** | 1.84% | 1.78% |
| Equivalent volatility | **72-79%** | 89% | 98% |
| Equivalent risk-free rate | **0.08-0.14%** | 0.52% | 0.59% |

| March 31, 2011 financing: | **December 31, 2011** | December 31, 2010 | Transaction Date |
|---|---|---|---|
| Trading market prices | **$ 0.38** | $ - | $ 1.18 |
| Estimated future volatility | **87-100%** | - | 100% |
| Dividend | **-** | - | - |
| Estimated future risk-free rate | **0.38-1.54%** | - | 1.32-3.64% |
| Equivalent volatility | **72-90-%** | - | 79-96% |
| Equivalent risk-free rate | **0.08-0.28%** | - | 0.39-1.09% |

Changes in the fair value of the warrant liabilities, carried at fair value, as reported as "unrealized gain (loss) on fair value of warrants" in the Statement of Operations:

| | For the Year Ended December 31, | | | Cumulative from March 19, 2011 (Inception) to December 31, |
|---|---|---|---|---|
| | **2011** | 2010 | 2009 | 2011 |
| December 18, 2007 financing | **$ -** | $ (510,776) | $ (243,841) | $ 50,722 |
| March 20, 2008 financing | **92,704** | (18,806) | (36,196) | 160,063 |
| June 5, 2009 financing: | | | | |
| Series I warrants | **-** | - | 707,111 | 707,111 |
| Series II warrants | **-** | (2,996,828) | 805,653 | (2,191,175) |
| Series III warrants | **661,266** | (191,333) | 746,511 | 1,216,444 |
| Warrants to placement agent | **60,139** | (29,255) | 68,100 | 98,984 |
| Derivative loss at inception | **-** | - | (328,937) | (328,937) |
| October 23, 2009 financing: | | | | |
| Warrants to institutional investors | **565,156** | (798,694) | 68,011 | (165,527) |
| Warrants to placement agent | **(102,487)** | (40,854) | 6,689 | (136,652) |
| June 30, 2010 financing | | | | |
| Warrants to institutional investors | **1,017,000** | 694,000 | - | 1,711,000 |
| Warrants to placement agent | **108,360** | 69,400 | - | 177,760 |
| March 31, 2011 financing: | | | | |
| Warrants to institutional investors | **2,282,666** | - | - | 2,282,666 |
| Warrants to placement agent | **93,646** | - | - | 93,646 |
| **Total:** | **$ 4,778,450** | $ (3,823,146) | $ 1,793,101 | $ 3,676,105 |

## 14. Put Feature on Common Stock

The anti-dilution provision extended in the December 2007 and March 2008 financings is a financial instrument separate and apart from the share. It is a freestanding written put (a put on our common stock). As an enterprise value put, the contracts' value moves inversely with the value of the underlying common stock which, under ASC 480, is not consistent with the general concepts or criterion for equity classified financial instruments. Accordingly, the written put was required to be classified as a liability under ASC 480 and recorded at fair value each reporting period, while the common stock achieved equity classification. Changes in the fair value of the anti-dilution make-whole provision are reported as "unrealized gain (loss) on fair value of put feature on common stock."

The anti-dilution make-whole provisions associated with the common stock, were valued using a probability–weighting of put values provided by the Lattice model. Additional value would result from the put upon an increase in the exercise price or upon decrease of the trading market price in the future. Since the exercise price is based on the actual sales price of the stock issued, it is not subject to adjustment unless there is an actual dilutive event. Therefore, the mechanism for determining the value of the put was to adjust the stock price input into the Lattice model based on the Company's estimated future stock price. A Random Walk Brownian Motion Stochastic Process ("Brownian") technique was used to estimate the market price at several points in the future (e.g. at inception, 6 months, 12 months, 18 months and 24 months) over the term of the put to determine if the stock price will be expected to decrease over the related interval of time. Brownian is a continuous stochastic process that is widely used in financing for modeling random behavior that evolves over time, and a stochastic process is a sequence of events or paths generated by probabilistic laws. At each interval, the Brownian technique was run and the simulation returned the mean stock price (the "expected stock price").

Expected stock prices returned from the stochastic model were then input into the Binomial Lattice model to provide a put value at each of the expected price and these values were probability weighted to determine the overall fair value of the anti-dilution make-whole provision. The term was based on the remaining term of the put (two years at inception) and the inputs for volatility and interest rate were based on projected volatility and interest rate in the future over the remaining term.

The following table summarizes the fair value of the anti-dilution provision recorded at fair value as liabilities:

| Fair Values: | December 31, 2011 | December 31, 2010 | Transaction Date |
|---|---|---|---|
| December 18, 2007 financing | $ - | $ - | $ 4,401,169 |
| March 20, 2008 financing | - | - | 553,569 |
| **Total:** | $ - | $ - | $ 4,954,738 |

The following table summarizes the number of shares indexed to the anti-dilution provision at the balance sheet date:

| Number of Shares Indexed: | December 31, 2011 | December 31, 2010 | Transaction Date |
|---|---|---|---|
| December 18, 2007 financing | - | - | 4,857,159 |
| March 20, 2008 financing | - | - | 642,858 |
| **Total:** | - | - | 5,500,017 |

**14. Put Feature on Common Stock** (cont'd)

Since the anti-dilution provisions expired on December 18, 2009 and March 20, 2010, there is no liability as of December 31, 2011 or 2010.

The assumptions used in calculating the fair values of the anti-dilution provision were as follows:

| December 18, 2007 financing: | **December 31, 2011** | December 31, 2010 | Transaction Date |
|---|---|---|---|
| Trading market prices | $ - | $ - | $ 1.75 |
| Estimated future stock price | - | - | $0.98-$1.75 |
| Estimated future volatility | - | - | 143% |
| Dividend | - | - | - |
| Estimated future risk-free rate | - | - | 3.14% |

| March 20, 2008 financing: | **December 31, 2011** | December 31, 2010 | Transaction Date |
|---|---|---|---|
| Trading market prices | $ - | $ - | $ 2.14 |
| Estimated future stock price | - | - | $1.36-$2.10 |
| Estimated future volatility | - | - | 142% |
| Dividend | - | - | - |
| Estimated future risk-free rate | - | - | 1.85% |

| | For the Year Ended December 31, | | | Cumulative from March 19, 2011 (Inception) to December 31, |
|---|---|---|---|---|
| | **2011** | 2010 | 2009 | 2011 |
| December 18, 2007 financing | **$ -** | $ - | $ 1,794,554 | $ 2,148,418 |
| March 20, 2008 financing | - | 97,713 | 120,625 | 167,121 |
| **Total:** | **$ -** | $ 97,713 | $ 1,915,179 | 2,315,539 |

## 15. Income Taxes

No provision for federal and state income taxes was required for the years ended December 31, 2011 and 2010, due to the Company's operating losses and increased deferred tax asset valuation allowance. At December 31, 2011 and 2010, the Company has unused net operating loss carry-forwards of approximately $55,394,000 and $46,283,000 which expire at various dates between 2021 and 2031. Some of this amount may be subject to annual limitations under certain provisions of the Internal Revenue Code related to "changes in ownership". During the year ended December 31, 2011, the Company amended prior years' tax returns to correct prior errors, which adjusted the net operating loss carryforward.

As of December 31, 2011 and 2010, the deferred tax assets related to the aforementioned carry-forwards have been fully offset by valuation allowances, since significant utilization of such amounts is not presently expected in the foreseeable future.

Deferred tax assets and valuation allowances consist of:

| | 2011 | 2010 |
|---|---|---|
| Net operating loss carry-forwards | **$ 21,603,700** | $ 18,050,380 |
| Stock option compensation | **1,753,400** | 1,568,000 |
| Book tax differences on assets and liabilities | **348,600** | 392,600 |
| Valuation allowance | **(23,705,700)** | (20,010,980) |
| Net deferred tax assets | **$ -** | $ - |

The Company files income tax returns in the U.S. federal and Maryland state jurisdictions. The 2008 through 2011 tax years are open and potentially subject to examination by the federal and Maryland state taxing authorities.

The Company was awarded a refundable tax credit of $822,137 in 2010 from the federal government through the Qualified Therapeutic Discovery Project Program enacted from the Patient Protection and Affordable Care Act of 2010. The Company was eligible for this tax credit based upon its expenses for qualified projects in 2009 and 2010. Qualified projects include defined projects which treat preventable diseases and conditions by conducting pre-clinical activities, clinical trials, or carrying out research protocols. The tax credit is reflected as a reduction to research and development expenses. The full amount of the credit has been received by December 31, 2011. As of December 31, 2010, $676,624 of the credit had been received and the remaining $145,513 was included as a receivable.

## 16. Commitments and Contingencies

a) The Company has contracted with various vendors to provide research and development services. The terms of these agreements usually require an initial fee and monthly or periodic payments over the term of the agreement, ranging from 2 months to 36 months. The costs to be incurred are estimated and are subject to revision. As of December 31, 2011, the total estimated cost to be incurred under these agreements was approximately $19,406,124 and the Company had made payments totaling $15,103,318 under the terms of the agreements as of December 31, 2011. All of these agreements may be terminated by either party upon appropriate notice as stipulated in the respective agreements.

b) The Company and three of its key executives entered into employment agreements. Each of these agreements was renewed on August 10, 2009 and expires on August 10, 2012. The agreements result in annual commitments for each key executive of $200,000, $350,000 and $250,000, respectively. The employment agreements were amended on September 9, 2010 and will expire on September 9, 2013.

c) On June 22, 2009, the Company entered into a License Agreement with Korea Research Institute of Chemical Technology ("KRICT") to acquire the rights to all intellectual properties related to Quinoxaline-Piperazine derivatives that were synthesized under a Joint Research Agreement. The initial license fee was $100,000, all of which was paid by December 31, 2009. The agreement with KRICT calls for a one-time milestone payment of $1,000,000 within 30 days after the first achievement of marketing approval of the first commercial product arising out of or in connection with the use of KRICT's intellectual properties. As of December 31, 2011, this milestone has not yet occurred.

d) On June 29, 2009, the Company signed a five year lease for 5,466 square feet of office space in Rockville, Maryland commencing on June 29, 2009. The lease requires annual base rents of $76,524 with increases over the next five years. Under the leasing agreement, the Company pays its allocable portion of real estate taxes and common area operating charges. Rent paid under the Company's lease during the years ended December 31, 2011, 2010 and 2009 was $148,593, $108,418 and $38,262, respectively.

Future rental payments over the next three years are as follows:

| | |
|---|---|
| 2012 | $ 158,835 |
| 2013 | 162,806 |
| 2014 | 82,408 |
| | $ 404,049 |

In connection with the lease agreement, the Company issued a letter of credit of $100,000 in favor of the lessor. The Company has restricted cash equivalents of the same amount for the letter of credit. On August 2, 2010 and July 1, 2011, the letter of credit was amended, and the commitment amount and restricted cash equivalent was reduced to $50,000 and $37,500, respectively.

**16. Commitments and Contingencies** (cont'd)

e) On September 21, 2009, the Company closed on a securities purchase agreement with Teva Pharmaceutical Industries Limited ("Teva"), under which Teva purchased 3,102,837 shares of our common stock for $3.5 million. Contemporaneous with the execution and delivery of this agreement, the parties executed a research and exclusive license option agreement ("RELO") pursuant to which the Company agreed to use $2,000,000 from the gross proceeds of the issuance and sale of shares to Teva to fund a research and development program for the pre-clinical development of RX-3117. On January 19, 2011, the Company entered into a second amendment to the securities purchase agreement (the "Second Amendment") in which Teva purchased 2,334,515 shares of the common stock of the Company for gross proceeds of $3,950,000, which the Company agreed to use for the further preclinical development of RX-3117. At December 31, 2011, the Company has proceeds remaining of $1,394,265 and has included this amount in restricted cash equivalents. The Company will be eligible to receive royalties on net sales of RX-3117 worldwide.

f) The Company established a 401(k) plan for its employees where the Company elected to match 100% of the first 3% of the employee's compensation plus 50% of an additional 2% of the employee's deferral. Expense related to this matching contribution aggregated $66,162, $65,019, and $49,519 for the years ended December 31, 2011, 2010 and 2009, respectively.

g) On June 28, 2010, the Company signed a one year renewal to use lab space commencing on July 1, 2010, and on June 22, 2011, the Company extended the lease for an additional year. The lease requires monthly rental payments of $4,554. Rent paid under the Company's lease during the years ended December 31, 2011, 2010 and 2009 was $54,648, $54,648 and $13,662, respectively.

h) On August 31, 2011, the Company entered into an agreement with a consultant for advisory services pertaining to the securing of grants or other funding sources for the Company. Per the terms of the agreement, the consultant will be compensated in shares of restricted common stock calculated by a formula of the funding received by the Company. As of December 31, 2011, the Company has not received funding or issued stock resulting from this agreement.

## 17. Fair Value Measurements

ASC 820 defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date, not adjusted for transaction costs. ASC 820 also establishes a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value into three broad levels giving the highest priority to quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3).

The three levels are described below:

Level 1 Inputs — Unadjusted quoted prices in active markets for identical assets or liabilities that is accessible by the Company;

Level 2 Inputs — Quoted prices in markets that are not active or financial instruments for which all significant inputs are observable, either directly or indirectly;

Level 3 Inputs — Unobservable inputs for the asset or liability including significant assumptions of the Company and other market participants.

The following tables present our assets and liabilities that are measured at fair value on a recurring basis and are categorized using the fair value hierarchy. The fair value hierarchy has three levels based on the reliability of the inputs used to determine fair value.

| | **Fair Value Measurements as of December 31, 2011** | | | |
|---|---|---|---|---|
| | **Total** | Level 1 | Level 2 | Level 3 |
| **Assets:** | | | | |
| Restricted cash equivalents | $ 1,431,765 | $ 1,394,265 | $ 37,500 | - |
| Marketable securities | 1,950,000 | 1,950,000 | - | - |
| **Total Assets:** | $ 3,381,765 | $ 3,344,265 | $ 37,500 | - |
| **Liabilities:** | | | | |
| Warrant liabilities | $ 868,725 | - | - | $ 868,725 |
| **Total Liabilities:** | $ 868,725 | - | - | $ 868,725 |

| | Fair Value Measurements as of December 31, 2010 | | | |
|---|---|---|---|---|
| | **Total** | Level 1 | Level 2 | Level 3 |
| **Assets:** | | | | |
| Restricted cash equivalents | $ 401,893 | $ 351,893 | $ 50,000 | - |
| Marketable securities | 2,451,620 | 2,451,620 | - | - |
| **Total Assets:** | $ 2,853,513 | $ 2,803,513 | $ 50,000 | - |
| **Liabilities:** | | | | |
| Warrant liabilities | $ 2,966,710 | - | - | $ 2,966,710 |
| **Total Liabilities:** | $ 2,966,710 | - | - | $ 2,966,710 |

## 17. Fair Value Measurements (cont'd)

As of December 31, 2011 and 2010, the Company's restricted cash equivalents are comprised of the following:

a) Money market funds valued at the net asset value of shares held by the Company and is classified within level 1 of the fair value hierarchy;

b) Certificate of deposit valued based upon the underlying terms of a letter of credit, as discussed in Note 16, and classified within level 2 of the fair value hierarchy.

Marketable securities consist of state authority and municipal security fund bonds which are valued at fair value and classified within level 1 of the fair value hierarchy.

The fair value methodology for the warrant liabilities is discussed in Note 13.

The carrying amounts reported in the financial statements for cash and cash equivalents, note receivable, prepaid expenses and other currents assets, and accounts payable and accrued expenses approximate fair value because of the short term maturity of these financial instruments.

The following table sets forth a reconciliation of changes in the year ended December 31, 2011 and 2010 in the fair value of the liabilities classified as level 3 in the fair value hierarchy:

| | Warrant Liabilities | Total Level 3 Liabilities |
|---|---|---|
| **Balance at January 1, 2011** | $ 2,966,710 | $ 2,966,710 |
| Additions, fair value of warrants issued in March, 2011 | 2,924,333 | 2,924,333 |
| Unrealized gains, net | (4,739,881) | (4,739,881) |
| Unrealized gains on expiration | (38,569) | (38,569) |
| Transfers out of Level 3 | (243,868) | (243,868) |
| **Balance at December 31, 2011** | $ 868,725 | $ 868,725 |

| | Put Feature on Common Stock | Warrant Liabilities | Total Level 3 Liabilities |
|---|---|---|---|
| **Balance at January 1, 2010** | $ 97,713 | $ 3,099,476 | $ 3,197,189 |
| Additions, fair value of warrants issued in June, 2010 | - | 1,980,880 | 1,980,880 |
| Unrealized losses, net | - | 3,823,146 | 3,823,146 |
| Unrealized gains on expiration | (97,713) | - | (97,713) |
| Transfers out of Level 3 | - | (5,936,792) | (5,936,792) |
| **Balance at December 31, 2010** | **$** - | $ 2,966,710 | $ 2,966,710 |

**17. Fair Value Measurements** (cont'd)

Additions consist of the fair value of warrant liabilities upon issuance. Transfers out of Level 3 for warrant liabilities consist of warrant exercises. The Company's policy is to recognize transfers in and transfers out as of the actual date of the event or change in circumstance that caused the transfer. There were no significant transfers in and out of Levels 1 and 2 for the years ended December 31, 2011 and 2010.

## 18. Selected Quarterly Data (Unaudited)

| | 2011 | | | |
|---|---|---|---|---|
| | For the Quarter Ended | | | |
| | March 31 | June 30 | September 30 | December 31 |
| Revenues | $ - | $ - | $ - | $ - |
| Expenses | (3,913,340) | (6,458,586) | (3,355,059) | (2,404,028) |
| Loss from Operations | (3,913,340) | (6,458,586) | (3,355,059) | (2,404,028) |
| Other Income (Expense) | (522,821) | 629,734 | 1,885,841 | 2,793,309 |
| Net Loss (Income) | $ (4,436,161) | $ (5,828,852) | $ (1,469,218) | $ 389,281 |
| Net Loss (Income) per share, basic and diluted | $ (0.05) | $ (0.06) | $ (0.02) | $ 0.00 |

| | 2010 | | | |
|---|---|---|---|---|
| | For the Quarter Ended | | | |
| | March 31 | June 30 | September 30 | December 31 |
| Revenues | $ - | $ - | $ - | $ - |
| Expenses | (1,593,118) | (3,189,014) | (2,367,526) | (3,156,251) |
| Loss from Operations | (1,593,118) | (3,189,014) | (2,367,526) | (3,156,251) |
| Other Income (Expense) | (6,440,478) | (408,056) | 2,586,417 | 545,919 |
| Net Loss (Income) | $ (8,033,596) | $ (3,597,070) | $ 218,891 | $ (2,610,332) |
| Net Loss (Income) per share, basic and diluted | $ (0.11) | $ (0.05) | $ 0.00 | $ (0.03) |

For the quarters ended June 30, 2011 and previous, the Company had reported $18,750 in revenue from the amortization of the Rexgene contribution as described in Note 9. The Company reclassified the revenue to a reduction of research and development expenses in the Statement of Operations. The reclassification had no effect on the Company's net loss or net loss per share for all quarters presented.

**EXHIBIT INDEX**

| | |
|---|---|
| 3.1 | Amended and Restated Certificate of Incorporation, filed as Appendix G to the Company's Definitive Proxy Statement on Schedule 14A (File No. 000-50590) dated April 29, 2005, is incorporated herein by reference. |
| 3.2 | Amended and Restated Bylaws, filed as Exhibit 3.1 to the Company's Current Report on Form 8-K filed on March 26, 2010, is incorporated herein by reference. |
| 4.1 | Specimen Certificate for the Company's Common Stock, par value $.0001 per share, filed as Exhibit 4.3 to the Company's Registration Statement on Form S-8 (File No. 333-129294) dated October 28, 2005, is incorporated herein by reference. |
| 4.2 | Form of Senior Debt Securities Indenture, filed as Exhibit 4.3 to the Company's Registration Statement on Form S-3 dated June 22, 2011, is incorporated herein by reference. |
| 4.3 | Form of Subordinated Debt Securities Indenture, filed as Exhibit 4.4 to the Company's Registration Statement on Form S-3 dated June 22, 2011 is incorporated herein by reference. |
| *10.1.1 | Rexahn Pharmaceuticals, Inc. Stock Option Plan, as amended, filed as Exhibit 4.4 to the Company's Registration Statement on Form S-8 (File No. 333-129294) dated October 28, 2005, is incorporated herein by reference. |
| *10.1.2 | Form of Stock Option Grant Agreement for Employees, filed as Exhibit 4.5.1 to the Company's Registration Statement on Form S-8 (File No. 333-129294) dated October 28, 2005, is incorporated herein by reference. |
| *10.1.3 | Form of Stock Option Grant Agreement for Non-Employee Directors and Consultants, filed as Exhibit 4.5.2 to the Company's Registration Statement on Form S-8 (File No. 333-129294) dated October 28, 2005, is incorporated herein by reference. |
| *10.2 | Employment Agreement, dated as of September 9, 2010, by and between Rexahn Pharmaceuticals, Inc. and C. H. Ahn, filed as Exhibit 10.1 to the Company's Current Report on Form 8-K filed on September 10, 2010, is incorporated herein by reference. |
| *10.3 | Employment Agreement, dated as of September 9, 2010, by and between Rexahn Pharmaceuticals, Inc. and T. H. Jeong, filed as Exhibit 10.3 to the Company's Current Report on Form 8-K filed on September 10, 2010, is incorporated herein by reference. |
| 10.4 | Lease Agreement, dated June 5, 2009, by and between Rexahn Pharmaceuticals, Inc. and The Realty Associates Fund V, L.P., filed as Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2009, is incorporated herein by reference |
| *10.5 | Employment Agreement, dated as of September 9, 2010, by and between Rexahn Pharmaceuticals, Inc. and Rakesh Soni, filed as Exhibit 10.2 to the Company's Current Report on Form 8-K filed on September 10, 2010, is incorporated herein by reference. |
| 10.6 | Securities Purchase Agreement, dated as of May 19, 2009 by and between Rexhan Pharmaceuticals, Inc. and the purchaser signatory thereto, filed as Exhibit 10.1 to the Company's Current Report on Form 8-K filed on May 20, 2009, is incorporated herein by reference. |
| 10.7 | Form of Warrant for the Company's Series I, II, and III Common Stock Purchase Warrants, filed as Exhibit 4.1 to the Company's Current Report on Form 8-K filed on May 20, 2009, is incorporated herein by reference. |
| 10.8 | Research and Exclusive License Option Agreement, dated as of June 26, 2009, by and between Rexahn Pharmaceuticals, Inc. and Teva Pharmaceutical Industries Limited, filed as Exhibit 10.1 to the Company's Current Report on Form 8-K filed on September 21, 2009, is incorporated herein by reference. |

| | |
|---|---|
| 10.9 | Securities Purchase Agreement, dated as of June 26, 2009, by and between Rexahn Pharmaceuticals, Inc. and Teva Pharmaceutical Industries Limited (the "Teva Securities Purchase Agreement"), filed as Exhibit 10.2 to the Company's Current Report on Form 8-K filed on September 21, 2009, and Amendment No. 1 to the Teva Securities Purchase Agreement, filed as Exhibit 10.3 to the Company's Current Report on Form 8-K filed on September 21, 2009, are incorporated herein by reference. |
| 10.10 | Securities Purchase Agreement, dated as of October 19, 2009, by and between Rexahn Pharmaceuticals, Inc. and the purchasers signatory thereto, filed as Exhibit 10.1 to the Company's Current Report on Form 8-K, filed on October 20, 2009, is incorporated herein by reference. |
| 10.11 | Form of Warrant for the Company's Common Stock Purchase Warrants, filed as Exhibit 4.1 to the Company's Current Report on Form 8-K filed on October 20, 2009, is incorporated herein by reference. |
| 10.12 | Securities Purchase Agreement, dated as of June 28, 2010 by and between Rexahn Pharmaceuticals, Inc. and the purchasers signatory thereto, filed as Exhibit 10.1 to the Company's Current Report on Form 8-K, filed on June 29, 2010, is incorporated herein by reference. |
| 10.13 | Form of Warrant for the Company's Common Stock Purchase Warrants, filed as Exhibit 4.1 to the Company's Current Report on Form 8-K filed on June 29, 2010, is incorporated herein by reference. |
| 10.14 | Amendment No. 2 to the Teva Securities Purchase Agreement, filed as Exhibit 10.1 to the Company's Current Report on Form 8-K filed on January 20, 2011, is incorporated herein by reference. |
| 10.15 | Form of Warrant for the Company's Common Stock Purchase Warrants, filed as Exhibit 4.1 to the Company's Current Report on Form 8-K filed on March 30, 2011, is incorporated herein by reference. |
| 12.1 | Statement re Computation of Ratios |
| 14 | Code of Ethics and Business Conduct, filed as Exhibit 14 to the Company's Annual Report on 10-K for the fiscal year ended December 31, 2008, filed on March 16, 2009, is incorporated herein by reference. |
| 16 | Letter of Lazar Levine & Felix LLP dated February 27, 2009, filed as Exhibit 16.1 to the Company's Amended Current Report on Form 8-K filed on March 2, 2009, is incorporated herein by reference. |
| 23 | Consent of ParenteBeard LLC, independent registered public accounting firm. |
| 24 | Power of Attorney. |
| 31.1 | Certification of Chief Executive Officer Pursuant to Rule 13a-14(a) or Rule 15d-14(a). |
| 31.2 | Certification of Chief Financial Officer Pursuant to Rule 13a-14(a) or Rule 15d-14(a). |
| 32.1 | Certification of Chief Executive Officer of Periodic Report Pursuant to 18 U.S.C. Section 1350. |
| 32.2 | Certification of Chief Financial Officer of Periodic Report Pursuant to 18 U.S.C. Section 1350. |
| 101.INS | XBRL Instance Document |
| 101.SCH | XBRL Taxonomy Extension Schema |
| 101.CAL | XBRL Taxonomy Calculation Linkbase |
| 101.DEF | XBRL Taxonomy Definition Linkbase |
| 101.LAB | XBRL Taxonomy Label Linkbase |
| 101.PRE | XBRL Taxonomy Presentation Linkbase |

* Management contract or compensation plan or arrangement.

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