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**

Commission file number 1-16467

Cortex Pharmaceuticals, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**33-0303583**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification Number)**

15241 Barranca Parkway, Irvine, California, 92618
(Address of principal executive offices, including zip code)

(949) 727-3157
(Registrant's telephone number, including area code)

Securities registered under Section 12(b) of the Act: None

Securities registered under Section 12(g) of the Act:

Common Stock, $0.001 par value
(Title of Class)

Preferred Share Purchase Rights, $0.001 par value
(Title of Class)

Indicate by check mark whether 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 Securities 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 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 (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of the registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☒

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 definitions of "accelerated filer," "large accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

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

Indicate by check mark whether the registrant is a shell company (as defined in Exchange Act Rule 12b-2). YES ☐ NO ☒

The aggregate market value of the voting stock held by non-affiliates as of June 30, 2011 was approximately $6,800,000 (based on the closing sale price of the common stock as reported by the Over the Counter Bulletin Board). As of March 23, 2012, there were 85,623,663 shares of the registrant's common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

NONE

TABLE OF CONTENTS

In this Annual Report on Form 10-K, the terms "Cortex," the "Company," "we," "us" and "our" refer to Cortex Pharmaceuticals, Inc., a Delaware corporation.

INTRODUCTORY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains certain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934 (the "Exchange Act") and we intend that such forward-looking statements be subject to the safe harbors created thereby. These forward-looking statements, which may be identified by words including "anticipates," "believes," "intends," "estimates," "expects," "plans," and similar expressions include, but are not limited to, statements regarding (i) future research plans, expenditures and results, (ii) potential collaborative arrangements, (iii) the potential utility of our proposed products and (iv) the need for, and availability of, additional financing.

The forward-looking statements included herein are based on current expectations that involve a number of risks and uncertainties. These forward-looking statements are based on assumptions regarding our business and technology, which involve judgments with respect to, among other things, future scientific, economic and competitive conditions, and future business decisions, all of which are difficult or impossible to predict accurately and many of which are beyond our control. Although we believe that the assumptions underlying the forward-looking statements are reasonable, actual results may differ materially from those set forth in the forward-looking statements. In light of the significant uncertainties inherent in the forward-looking information included herein, the inclusion of such information should not be regarded as a representation by us or any other person that our objectives or plans will be achieved.

Forward-looking statements speak only as of the date they are made. We do not undertake and specifically decline any obligation to update any forward-looking statements or to publicly announce the results of any revisions to any statements to reflect new information or future events or developments.

PART I

Item 1. Business

We are engaged in the discovery and development of innovative pharmaceuticals for the treatment of breathing disorders, including respiratory depression and sleep apnea. Our focus is on the prevention of respiratory depression in post-surgical patients. Such patients are often treated with powerful anesthetics, analgesics or sedatives — and the potential respiratory depression resulting from one or a combination of such drug treatments can lead to respiratory arrest and possibly cardiac arrest, each of which is associated with extended and costly hospital stays and significant morbidity and mortality. We are also seeking to reduce the respiratory depression risks related to chronic opioid therapy, without impacting the pain relief provided by the opioids. In the field of sleep apnea, our goal is to provide patients with an oral therapy alternative. Currently, the most commonly prescribed therapy is a mask-type device connected to a positive-pressure air pump that is worn while sleeping, but the device is associated with discomfort and very high patient non-compliance.

For the past several years, our discovery and development focused on therapies for the treatment of psychiatric disorders and neurological diseases. We recently performed a strategic review of our AMPAKINE® platform and determined that our clinical development in respiratory depression and sleep apnea provide the nearest term and most cost-effective opportunities for potential commercialization of our compounds. We have conducted extensive preclinical and clinical development in the treatment of neurological and psychiatric diseases and disorders, and have amassed a substantial patent portfolio in these areas. Given our current focus on the treatment of breathing disorders, we may seek to out-license

or sell our rights to the use of AMPAKINE compounds for the treatment of neurological and psychiatric indications.

We are developing novel small molecule compounds that positively modulate AMPA-type glutamate receptors, a complex of proteins involved in the communication between nerve cells in the mammalian brain. These compounds, termed A MPAKINE compounds, enhance the activity of the AMPA receptor. These molecules are designed and developed as proprietary pharmaceuticals because we believe they hold promise for the treatment of diseases and disorders that are known, or thought, to involve depressed functioning of pathways in the brain that use glutamate as a neurotransmitter. Our most advanced clinical compounds are CX717 and CX1739, both of which are in Phase II clinical development.

The AMPAKINE platform addresses large potential markets. Recent research estimates that the treatment market for respiratory depression may be approximately $1.2 billion in the U.S. alone. Research by consulting firm, Frost & Sullivan, estimates that U.S. revenues in the sleep apnea diagnostic and therapeutic devices market totaled approximately $1.35 billion in 2008, with a 16.2% growth rate. Our business plan involves partnering with larger pharmaceutical companies for research, development, clinical testing, manufacturing and global marketing of specific A MPAKINE compounds for those indications that require sizable, expensive Phase III clinical trials — and very large sales forces to achieve significant market penetration. Disorders such as respiratory depression caused by opiate analgesics and sleep apnea may benefit from treatment with A MPAKINE drugs and require a large market presence.

At the same time, we plan to develop compounds internally for a selected set of indications, some of which will allow us to apply for “Orphan Drug” status. Such designation by the Food and Drug Administration (the “FDA”) is usually applied to products where the number of patients in the United States (“U.S.”) in the given disease category is typically less than 200,000. The European Medicines Agency adopted a similar system termed “The Regulation of Orphan Medicinal Products.” These Orphan Drug indications typically require more modest investment in the development stages, follow a quicker regulatory path to approval, and involve a more concentrated and smaller sales force targeted at selected medical centers in the U.S. and Europe. Such Orphan Drug indications that we plan to pursue internally may include multiple system atrophy and vaso-occlusive crisis associated with sickle cell disease.

We will continue to seek one or more significant license or collaboration arrangements with larger pharmaceutical companies, while we prepare ourselves for potential entrance into the pharmaceutical market with our own products. These arrangements may permit other applications of the A MPAKINE compounds to be advanced into later stages of clinical development and may provide access to the extensive clinical trials management, manufacturing and marketing expertise of such companies.

In October 2000, we entered into a research collaboration agreement and a license agreement with Les Laboratoires Servier (“Servier”). The license agreement, as amended and in effect until June 2011, allowed Servier to develop and commercialize three A MPAKINE compounds selected at the end of the research collaboration in defined territories of Europe, Asia, the Middle East and certain South American countries as a treatment for (i) declines in cognitive performance associated with aging, (ii) neurodegenerative diseases and (iii) anxiety disorders. The research collaboration with Servier was terminated at the end of 2006; accordingly, the worldwide rights for (a) treatment of declines in cognitive performance associated with aging, (b) neurodegenerative diseases, (c) anxiety disorders, and (d) sexual dysfunction have been returned to us. In November 2010, Servier selected a jointly discovered A MPAKINE compound, CX1632 (S47445) to advance into Phase I clinical testing.

In June 2011, our agreements with Servier were amended and restated with an option agreement for the A MPAKINE CX1632. In exchange for an option to expand its rights to the compound, Servier provided us a non-refundable payment of $1,000,000. In accordance with the amended and restated agreement, Servier exercised its option for CX1632 in late September 2011 and shortly thereafter paid us

an additional $2,000,000 and assumed our obligation to pay certain royalties and milestone payments to the University of California.

Following Servier's exercise of the option, we assigned our rights to our patents and patent applications relating to CX1632 and Servier acquired sole ownership of the global patent rights to the compound, along with a sub-license of our rights to all indications licensed from the University of California for use with CX1632. As a result of Servier's exercise of the option, we will not be entitled to any royalties or further payments from Servier's development and commercialization of CX1632. However, we retain all rights for the remaining AMPAKINE technology previously subject to the agreements with Servier on a worldwide basis.

In March 2010, we entered into an asset purchase agreement with Biovail Laboratories International SRL ("Biovail"). Pursuant to the asset purchase agreement, Biovail acquired our interests in CX717, CX1763, CX1942 and the injectable dosage form of CX1739, as well as certain of our other AMPAKINE compounds and related intellectual property for use in the field of respiratory depression or vaso-occlusive crises associated with sickle cell disease. In connection with the transaction, Biovail paid us $10,000,000. In addition, the agreement included milestone payments to us in an aggregate amount of up to $15,000,000 plus the reimbursement of certain related expenses, each conditioned upon the occurrence of particular events relating to the clinical development of certain assets that Biovail acquired. As part of the transaction, Biovail licensed back to us certain exclusive and irrevocable rights to some acquired AMPAKINE compounds for use outside of the field of respiratory depression or vaso-occlusive crises associated with sickle cell disease. Accordingly, following the transaction with Biovail, we retained rights for the majority of patented compounds in our AMPAKINE drug library, as well as all rights to the non-acquired AMPAKINE compounds for the treatment of neurological diseases and psychiatric disorders that have historically been a focus of our portfolio. Additionally, we retained our rights to develop and commercialize AMPAKINE compounds as a potential treatment for sleep apnea disorders, including an oral dosage form of CX1739.

In September 2010, Biovail's parent corporation, Biovail Corporation, combined with Valeant Pharmaceuticals International in a merger transaction and the combined company was renamed "Valeant Pharmaceuticals International, Inc." ("Valeant"). Following the merger, Valeant and Biovail conducted a strategic and financial review of the product pipeline and in November 2010, Biovail announced its intent to exit from the respiratory depression project acquired from us in March 2010.

Following that announcement, we immediately entered into discussions with Biovail regarding the future of the respiratory depression project. In March 2011, we entered into a new agreement with Biovail to reacquire the AMPAKINE compounds, patents and rights that Biovail acquired from us in March 2010. The new agreement included an upfront payment by us of $200,000 and potential future payments of up to $15,150,000 based upon the achievement of certain development and New Drug Application submission and approval milestones. Biovail is also eligible to receive additional payments of up to $15,000,000 based upon our net sales of an intravenous dosage form of the compounds for respiratory depression.

In addition, at any time following the completion of Phase I clinical studies and prior to the end of Phase IIa clinical studies, Biovail retains an option to co-develop and co-market intravenous dosage forms of an AMPAKINE compound as a treatment for respiratory depression and vaso-occlusive crises associated with sickle cell disease. In such an event, we would be reimbursed for certain development expenses to date and Biovail would share in all such future development costs with us. If Biovail makes the co-marketing election, we would owe no further milestone payments to Biovail and we would be eligible to receive a royalty on net sales of the compound by Biovail or its affiliates and licensees.

For the years ended December 31, 2011 and 2010, our research and development expenses were approximately $2,188,000 and $3,739,000, respectively, with sublicense fees triggered by our March

2010 transaction with Biovail, decreased personnel levels and the timing of clinical expenses for CX1739 contributing to the reduction in expenses during the year ended December 31, 2011.

We face a number of risks in moving our technology through research, development and commercialization. We have never had revenues from commercial sales, have never been profitable on an annual basis before the year ended December 31, 2010 and have incurred cumulative net losses from inception through December 31, 2011 of approximately $116,390,000. We do not anticipate profitability in 2012 or in the short-term thereafter, and will continue to require external funding, from key corporate partnerships and licenses of our technology or from the private or public equity markets, debt from banking arrangements or some combination of these financing vehicles. As of yet, neither we nor any of our corporate partners have obtained regulatory approval to market any of our products. All of these risks, and others, are described in "Risk Factors" starting on page 17.

We were incorporated in Delaware on February 10, 1987 under our original name, X-Age, Inc. On August 24, 1988, we changed our name to Cortex Pharmaceuticals, Inc. Our executive offices are located at 15241 Barranca Parkway, Irvine, California 92618, and our telephone number is (949) 727-3157.

Our website is www.cortexpharm.com. We make available free of charge through our website our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and all amendments to those reports as soon as practicable after such material is electronically filed with the Securities and Exchange Commission (the "SEC").

AMPA Receptor Modulator Program

In June 1993, we licensed a new class of molecules and technology, which we refer to as the A MPAKINE technology, from the University of California. We have subsequently been working to develop and patent new AMPAKINE molecules and to demonstrate efficacy and safety in a number of clinical indications.

AMPAKINE compounds facilitate the activity of the AMPA receptor, which is activated by the endogenous neurotransmitter glutamate. A MPAKINE compounds interact in a highly specific manner with the AMPA receptor, lowering the amount of neurotransmitter required to generate a response, and increasing the magnitude and/or duration of the response to a given amount of glutamate. We believe that this selective amplification of the glutamate signal may eventually find utility in the treatment of neurological and psychological diseases and disorders characterized by depressed functioning of brain pathways.

Our AMPAKINE technology is composed of two groups of compounds that we have designated as "low impact" and "high impact." Compounds from these two groups bind at different sites on the AMPA receptor complex and affect the subsequent cellular responses in different ways. Both types of compounds positively modulate the AMPA receptor function; low impact compounds generally increase the amplitude of the neuronal action potential, while the high impact compounds increase both the amplitude and the half-width of the neuronal action potential. Additionally, high impact compounds activate the expression of certain genes in the neuron, including the production of certain brain growth factors such as Brain-Derived Neurotrophic Factor ("BDNF"). BDNF mediates the differentiation and survival of neurons by providing the necessary trophic support, and modulates synaptic transmission and plasticity. We believe that this action of AMPAKINE molecules imparts these compounds with the potential for disease-modifying activity, since deficits in BDNF have been observed in psychiatric diseases such as anxiety and depression, and in neurodegenerative disease such as Alzheimer's disease, Huntington's disease, Parkinson's disease, and Rett's syndrome.

The vast majority of excitatory synaptic connections in the brain utilize glutamate as the neurotransmitter, and those synaptic connections decline with age. Thus, brain disorders associated with aging may be amenable to treatment with AMPAKINE compounds. Such disorders include MCI, Alzheimer's disease and Parkinson's disease, schizophrenia, depression and other psychiatric disorders may involve imbalances of neurotransmitters in the brain, such as dopamine, serotonin, acetylcholine and norepinephrine. Given that glutamate modulates many of these other neurotransmitters, it may play a role in the rebalancing of neurotransmission. As stated above, given our current focus on respiratory disorders, we may seek to out-license or sell our rights to the use of AMPAKINE compounds for the treatment of neurological and psychiatric indications, as we focus on the development of our compounds for the treatment of brain-related breathing disorders.

We continue to design, synthesize and test new AMPAKINE molecules. Significant progress has been made with both our "low impact" and "high impact" programs, resulting in the recent filing of patent applications that, if granted, will provide patent protection for our new molecules through 2028.

"Low Impact" AMPAKINE Platform

Following the reacquisition of our assets from Biovail in March 2011, our most advanced low impact AMPAKINE compounds are CX717 and CX1739, both of which are in Phase II clinical development.

CX717

Our Phase I safety trials provided evidence of safety for doses of up to 1,600mg of CX717 in single doses and up to 800mg of the drug given twice daily for ten (10) days in 104 human subjects. The pharmacokinetic results to date from the volunteers who have taken CX717 show that the half-life of the drug averages 9 hours, and the amount of drug absorbed over the range of 25mg to 1600mg was linear and predictable. Very high plasma drug levels were found in the volunteers, indicating an excellent absorption profile for the drug. CX717 exhibited an excellent safety profile in normal volunteers.

Several Phase II studies have been completed with CX717, including two sleep deprivation studies and a study in adults with ADHD. A positron emission tomography (PET) scan study with the compound in patients with Alzheimer's disease was closed following the sale of the compound to Biovail in March 2010. As indicated above, we reacquired rights to CX717 from Biovail in March 2011.

Additionally, two Phase II studies undertaken in 2008 were conducted in Germany and examined the effect of CX717 on the respiratory depression induced by the opiate agonist, alfentanil. The first study, RD-01, was a single dose, randomized, double-blind, placebo-controlled, two-period crossover design in 16 healthy subjects. The primary study objective was to determine if CX717 can prevent respiratory depression while preserving the underlying desired analgesic effect of alfentanil. Currently available opioid reversal agents, such as naloxone (Narcan ®), also eliminate the pain relieving effect of opioids, which is a major drawback to their use in a post-surgery setting.

Top-line data from the RD-01 study demonstrated that a single oral dose of 1500mg of CX717 achieved statistical significance (p=0.005) over placebo on the primary endpoint measure of spontaneous basal respiration without affecting the pain relieving effects of alfentanil. The degree of reversal of the basal respiratory rate was similar to that obtained with the opioid antagonist, naloxone. The analgesic properties of alfentanil were maintained in an acute pain model in the presence of CX717, whereas alfentanil's pain relieving properties were fully blocked by naloxone.

The second study, RD-02, was a randomized, double-blind, placebo-controlled, two-period crossover design in 24 healthy subjects with three doses of CX717 (8 subjects/dose). The objective of the study was to determine an optimal dose for the prevention of respiratory depression in humans. Top-line results from this study demonstrated that a single dose of either 900mg or 2100mg of CX717 has positive

effects on respiratory depression induced by pain relieving opiates. Procedural difficulties were encountered in the 1500mg dose group that prevented a reliable measure of the primary endpoint. The primary performance measures for the study were derived from a CO_2 re-breathing procedure that measured the breathing response of the subject to increased CO_2 levels in the presence of alfentanil. The primary measure, the minute expiratory volume at 55mgHg CO_2 (V_E55), was reversed by 900mg and 2100mg of CX717 in comparison to placebo ($p<0.04$ and $p<0.03$, respectively).

Based upon the encouraging results from RD-01 and RD-02, subject to the availability of additional resources, we plan to develop an intravenous dosage formulation of CX717, which would provide better treatment options in a hospital setting.

In early 2006, we reported that a three-week treatment with CX717 reduced symptoms of ADHD in adult patients. Forty-nine patients with ADHD completed the randomized, double-blind, placebo-controlled, two-way crossover design study. The primary outcome measure was the ADHD Rating Scale, which evaluates both the inattentiveness and hyperactivity symptoms. The overall ADHD Rating Scale score showed positive statistical changes in the ADHD Rating Scale scores ($p<0.002$) in the 800 mg twice daily dose group of 22 patients and also statistically significant effects on the hyperactivity subscale ($p<0.01$) and the inattentiveness subscale ($p<0.03$) compared to placebo. The 200 mg twice daily dose, tested in a group of 27 patients, did not show a significant effect. However, while the ADHD-RS values did not separate from the placebo values at the lower dose, they did show a trend for improvements in the ADHD-RS as dosing progressed from week 1 to week 3. CX717 was well tolerated, and there were no serious adverse events or other significant safety concerns with either dose.

Regulatory Issues with CX717

In late March 2006 the Neurology Division of the FDA notified us that it was placing CX717 on clinical hold due to concerns related to some preclinical animal toxicology data. After submitting a response to the Agency in September 2006, the clinical hold was lifted in October 2006, but the FDA limited the approved dosage levels of the compound. Those dosing limitations impacted our plans to conduct further clinical testing of CX717. We submitted additional data to the Neurology Division in April 2007 that demonstrated that the animal toxicity issues were postmortem, fixative-induced effects. In July 2007, the Neurology Division removed the dosing restrictions, and allowed us to resume our clinical trial with CX717 in Alzheimer's disease at all dose levels requested prior to the hold being placed on the compound.

In September 2007 we submitted a Notice of Claimed Investigational Exemption for a New Drug (an "IND") to the Division of Psychiatry Products of the FDA to allow us to proceed with longer term human clinical studies of CX717 for ADHD. In October 2007, the Division rejected our IND application. At this time, we do not anticipate submitting further data to the Agency for CX717 as a treatment for ADHD, but we continue to advance additional preclinical AMPAKINE compounds such as CX1739 that may be a potential therapy for the indication.

The data developed during the additional toxicology studies conducted during 2006 and 2007 clearly demonstrated that the postmortem toxicology artifacts seen with CX717 did not occur with short dosing periods, but were found only after chronic dosing at very high dose levels in animals. We believe that by developing an acute use for CX717 we can mitigate any perceived risks associated with chronic doses of the compound. The risk/benefit ratio for the treatment of patients with life-threatening disorders, such as respiratory depression, is significantly different than that for the treatment of ADHD.

CX1739

CX1739 completed pre-clinical safety and toxicology studies in 2008 and, importantly, the toxicological artifact previously observed in animals with CX717 was not seen with CX1739. Phase I clinical studies with CX1739 were initiated in 2008 and completed in early 2009. In the Phase I clinical

studies, the safety and tolerability of CX1739 was evaluated in 80 healthy, male volunteers. No changes were seen in vital signs, and there were no cardiovascular changes or changes in blood chemistry at any of the doses tested, including single doses of up to 1200mg and doses of 600mg twice-a-day (for a 1200mg total daily dose) for 7 days. The maximum well-tolerated single dose was identified at 900mg and 450 mg twice-a-day (for a 900mg total daily dose) for 7 days.

The pharmacokinetic results to date from the volunteers who have taken CX1739 show that the half-life of the drug averages 7.2 hours, and the amount of drug absorbed over the range of 50mg to 1200mg was linear and predictable. Very high plasma drug levels were found in the volunteers, indicating an excellent absorption profile for the drug. In summary, CX1739 exhibited an excellent safety profile in healthy male volunteers.

Given the positive results previously demonstrated with CX717 in respiratory depression induced by opiates, we plan to commence similar studies in respiratory depression with AMPAKINE CX1739.

In early 2009, we initiated a Phase IIa study with CX1739 in a randomized, double-blind, placebo-controlled study in 20 subjects with moderate to severe obstructive sleep apnea in the UK. Sixteen of the subjects received a single oral dose of CX1739 and four subjects received matching placebo for one night. The objective of the study was to explore the safety and tolerability of the compound in the sleep apnea population and to assess the efficacy of CX1739 on a range of sleep apnea parameters assessed by overnight polysomnography. Enrollment in the study was slower than expected due to several factors, including variability in sleep apnea scores, fairly strict enrollment criteria and financial constraints.

In February 2011, we announced top-line results from the study that demonstrated that a single dose of CX1739 improved a number of sleep apnea parameters across most of the patients who were given the drug. CX1739 did not reduce the mean apnea/hypopnea index (AHI; frequency of apnea or hypopnea events per hour of sleep), but three subjects (20%) treated with CX1739 were deemed responders with a more than 40% reduction in the AHI and there were no such AHI responders in the placebo group. Five subjects (30%) in the CX1739 treatment group were deemed responders with a more than 40% reduction in the apnea/hypopnea time (AHT; cumulative time of all apneas and hypopneas over the night), with no such AHT responders in the placebo group. There were also statistically significant improvements in a number of blood oxygenation measurements.

Sleep efficiency, the percent of time asleep while in bed for the eight hour session, was significantly reduced by about 20% after administration of CX1739, but the level of daytime sleepiness, determined by the Clinical Global Impressions Daytime Vigilance test given the morning following treatment, was unaffected by CX1739.

CX1739 was safe, but the dose appeared to be near the limits of tolerability. There were no serious adverse events and no clinically relevant changes in vital signs, cardiovascular or other safety assessments.

We believe that the results from this study merit conducting a larger study to better understand the sleep apnea population that may be most responsive to the treatment with CX1739. We may find that repeated daily treatment with CX1739 for several weeks may provide benefit over a single dose and improve symptoms of sleep apnea in those subjects who did not respond after a single dose.

Other “Low Impact” Compounds

In-house research activities have led to the identification of a chemically distinct series of low impact AMPAKINE molecules, and in 2008 we filed an application for patent protection for the core scaffold of these molecules. The related application was approved in February 2012, and provides patent protection into 2028. The lead molecules in this series, CX2007 and CX2076, have successfully

undergone initial early preclinical testing, and subject to the availability of sufficient finances, additional resources will be invested in selecting a lead compound from this series for further preclinical and clinical development activities.

"High Impact" AMPAKINE Platform

Several of our "high impact" compounds have been tested in animal behavioral models. In genetic mouse models of Huntington's disease, the high impact molecule CX929 has demonstrated the potential to restore depressed levels of the growth factor BDNF, and improve deficits in a process known as long-term potentiation, a cellular mechanism thought to underlie learning and memory. Furthermore, treatment of these mice with CX929 resulted in an improvement in motor deficits that occur in non-treated mice. This preclinical data suggests that high impact AMPAKINE molecules might have beneficial effects in patients with Huntington's disease.

We have also looked at the effect of AMPAKINE molecules on two different genetically altered mouse models of central nervous system disease: Rett's syndrome and Fragile X syndrome. The Rett's syndrome mice exhibit many of the same characteristics as the disease that occurs in girls. One aspect of the disease, the irregular breathing patterns with bouts of apnea, is a disturbing aspect of the disease in patients that is also seen in the genetically altered mice. We have found that AMPAKINE molecules can restore the irregular breathing pattern of Rett's syndrome mice to a more normal, regular breathing pattern. With regard to mice that demonstrate characteristics of Fragile X syndrome, the current data suggests that AMPAKINE molecules, such as CX929, augment levels of the growth factor BDNF, which could be important for correcting abnormalities in dendritic spines and synaptic function associated with Fragile X syndrome. As stated above, we may seek to out-license or sell our rights to the use of AMPAKINE compounds for the treatment of neurological and psychiatric disorders, including compounds within the "high impact" AMPAKINE platform.

See "Risk Factors – *Risks related to our business* – We are at an early stage of development and we may not be able to successfully develop and commercialize our products and technologies*"* for a discussion of certain risks related to the development and commercialization of our products, including, without limitation, risks related to our clinical trials.

Potential Applications for AMPAKINE Compounds

Respiratory Depression

Respiratory depression represents a potentially life-threatening condition resulting from analgesic, hypnotic and anesthesia medications that are often used at the same time during various surgical procedures. The condition results in a depression of breathing that causes a reduced availability of oxygen to vital organs such as the heart and brain.

Respiratory depression is a leading cause of death from the overdose of some classes of abused drugs, but the condition also may arise during typical physician-supervised procedures such as surgical anesthesia, post operative analgesia and as a consequence of normal out-patient management of pain from illnesses or injuries. Events also may occur when two or more central nervous depressants are taken together or when prescribed drugs are taken in ways not intended by the physician. Sleeping disorders like sleep apnea, older age, other respiratory disorders (such as asthma and chronic obstructive pulmonary disease) are risk factors for respiratory depression. Respiratory depression can lead to respiratory arrest and cardiac arrest, requiring immediate resuscitation, which, if not remediated successfully, can result in significant morbidity (e.g., heart failure, brain damage) or mortality. Recent research estimates that the treatment market for respiratory depression may be approximately $1.2 billion in the U.S. alone.

Our own market research suggests that respiratory depression may occur during or within 1-2 days of 10% to 15% of surgical procedures (with higher percentages in higher-risk patients discussed above) and some of these respiratory depression events lead to respiratory arrest, increased hospitalization or death. The primary drug classes responsible for these effects are opiates and barbiturates. Opiates include standard pain medications such as morphine, fentanyl and codeine, along with vicodin, hydrocodone and oxycontin. Barbiturates include sedative drugs such as pentobarbital.

Currently, the only pharmacological method to counter respiratory depression induced by opiates is to administer opiate receptor antagonists such as naloxone (Narcan®), but those antagonists eliminate the desired analgesic activity of drugs administered for severe pain relief, which is a major drawback for using those agents. The non-pharmacological treatment for respiratory depression is to sedate then intubate the patient, and connect them to an artificial respirator until unaided breathing can be maintained.

In May 2007, we entered into an exclusive patent license agreement with the University of Alberta to potentially broaden the use of our AMPAKINE technology to prevent and treat opiate- and barbiturate-induced respiratory depression. The related patent application filed by Dr. John Greer of the University of Alberta describes a method by which an AMPAKINE compound can reverse the respiratory depression associated with classes of commonly prescribed opiate analgesics and barbiturates. Dr. Greer has demonstrated in animal models that the respiratory depression induced by these agents can be reversed or prevented with an AMPAKINE, without a reduction of pain relief or sedation. We believe that this creates the opportunity to use an AMPAKINE compound in conjunction with commonly prescribed barbiturates or opiates to reduce the mortality caused by these adverse reactions. Preliminary animal data also suggests that an AMPAKINE compound may also reverse the respiratory depression effects of propofol (Diprivan®), a commonly used intravenous anesthetic agent.

Sleep Apnea

Sleep apnea is a serious disorder in which breathing repeatedly stops long enough to disrupt sleep, and temporarily decrease the amount of oxygen and increase the amount of carbon dioxide in the blood. Sleep apnea is defined by more than five periods per hour of ten seconds or longer without breathing. The most common type of sleep apnea is obstructive sleep apnea, which occurs by repetitive narrowing or collapse of the pharyngeal airway during sleep. Central sleep apnea, a rarer type, is caused by a problem with the control of breathing in the brain (which is accomplished in the brain stem). Mixed sleep apnea, the third type, is a combination of central and obstructive factors occurring in the same episode of sleep apnea. Sleep apnea is often made worse by central nervous system depressants such as alcohol and opioid analgesics.

The repetitive cessation of breathing during sleep has substantial impact on the affected individuals. The disorder is associated with major co-morbidities including excessive daytime sleepiness and increased risk of cardiovascular disease (such as hypertension, stroke and heart failure), diabetes and weight gain. It is therefore important for these patients to seek therapy. However, there is currently no approved pharmacotherapy, and the most common treatment is to use continuous positive airway pressure (“CPAP”) delivered via a nasal or full-face mask, as long as patients are able to tolerate the treatment. It is estimated that in more than 50% of cases, patients stop using the CPAP device on a regular basis. Given the large patient population of greater than 17 million in the U.S. alone, and a lack of suitable treatment options, there is a very large opportunity for pharmacotherapy to treat this disorder.

Data obtained from animal studies have demonstrated that AMPAKINE compounds can specifically stimulate breathing by activating regions in the brain stem. Cortex’s hypothesis is that by stimulating breathing and increasing muscle tone in the upper airways, CX1739 will be effective in maintaining breathing throughout the night in sleep apnea patients.

Other Indications

We may conduct studies in various other indications that have not been discussed above. In recent years, we have developed a number of new patent applications for new composition of matter patents for both high and low impact compounds. If these applications are granted, they will provide patent protection for our new AMPAKINE molecules through 2028.

We have conducted extensive preclinical and clinical development in the treatment of neurological and psychiatric disorders and have accumulated a substantial patent portfolio in these areas. Neurological and psychiatric disorders that may benefit from treatment with the A MPAKINE compounds include, but are not limited to, Attention Deficit Hyperactivity Disorder, Alzheimer's disease, mild cognitive impairment, schizophrenia and depression. As mentioned earlier, given our current focus on the treatment of breathing disorders, we may seek to out-license or sell our rights to the use of our A MPAKINE compounds for the treatment of such neurological and psychiatric indications.

Manufacturing

We have no experience or capability to either manufacture bulk quantities of the new compounds that we develop, or to produce finished dosage forms of the compounds, such as tablets or capsules. We rely, and presently intend to rely, on the manufacturing and quality control expertise of contract manufacturing organizations or current and prospective corporate partners. There is no assurance that we will be able to enter into manufacturing arrangements to produce bulk quantities of our compounds on favorable financial terms. There is, however, substantial availability of both bulk chemical manufacturing and dosage form manufacturing capability throughout the world that we believe we can readily access. See "Risk Factors – *Risks related to our business* – We are at an early stage of development and we may not be able to successfully develop and commercialize our products and technologies" for a discussion of certain risks related to the development and commercialization of our products.

Marketing

We have no experience in the marketing of pharmaceutical products and do not anticipate having the resources to distribute and broadly market any products that we may develop. We will therefore continue to seek commercial development arrangements with other pharmaceutical companies for our proposed products for those indications that require significant sales forces to effectively market. In entering into such arrangements, we may seek to retain the right to promote or co-promote products for certain of the Orphan Drug indications in North America. We believe that there is a significant expertise base for such marketing and sales functions within the pharmaceutical industry and expect that we could recruit such expertise if we pursue to directly market a drug. With respect to Orphan Drugs, we may distribute and market such products directly. See "Risk Factors – *Risks related to our business* – We are at an early stage of development and we may not be able to successfully develop and commercialize our products and technologies" for a discussion of certain risks related to the development and commercialization of our products.

Technology Rights

In 1993, we entered into an agreement with the Regents of the University of California (the "University"), under which we secured exclusive commercial rights to AMPA-receptor modulating technology and compounds (the AMPAKINE technology) for the treatment of deficits of memory and cognition. The relationship later was expanded to include additional agreements for other indications. We paid an initial license fee and are obligated to make additional payments, including license maintenance fees and patent expense reimbursements creditable against future royalties, over the course of initiating and conducting human clinical testing and obtaining regulatory approvals. When and if sales of licensed products commence, we will pay royalties on net sales. During the fiscal year ended June 30, 2003, we

amended the agreement with the University to exclude the treatment of disease areas outside of the central nervous system that we would not have the resources or the capability to develop in a timely manner.

Additionally, in connection with our March 2010 transaction with Biovail, with our consent, the University and Biovail entered an agreement to provide Biovail with non-exclusive commercial rights to the AMPAKINE technology for use for the treatment of respiratory depression or vaso-occlusive crises associated with sickle cell disease. As a result of our transaction with Biovail in March 2010, we incurred certain license fees payable to the University. In March 2011, when we reacquired the compounds and rights that we earlier sold to Biovail the non-exclusive commercial rights provided to Biovail by the University were terminated. Of the patents licensed from the University, the date for the last to expire patent is January 2025. See "Risk Factors – *Risks related to our business* – Our products rely on licenses from the Regents of the University of California, and if we lose access to these technologies, our business would be substantially impaired" for a discussion of certain risks related to our licenses with the University.

Patents and Proprietary Rights

We are aggressively pursuing patent protection of our technologies. We own or have exclusive rights (within our areas of product development) to more than 25 patent families comprising over 250 issued or allowed U.S. and foreign patents and over 200 additional U.S. patent applications and their international counterparts pending. These patents form the foundation of the Company's business and the pharmaceutical industry in general. Additionally, we are continually filing new disclosures and patents for new structures and new uses, and in 2008 we filed new patent applications covering hundreds of new compounds. Some of these applications have subsequently been granted, as explained more fully below. If the remaining applications are granted as filed, they will provide patent protection for our new molecules through 2028.

One of our licensed patents covers the method of use for our AMPAKINE compounds — as well as compounds made by others — and describes the mechanism by which AMPAKINE compounds may affect the treatment of memory and cognition. This patent was issued to the University in the U.S. in 1999, and provides protection through 2016. We believe that this patent provides coverage in the U.S. that extends to both neurological disorders such as Alzheimer's disease as well as psychiatric conditions with cognitive disturbances including depression, obsessive compulsive disorder and phobic disorders. Similar method-of-use patents have been issued to us in Mexico, Australia and New Zealand and we have licenses to such patents.

In November 2003, a similar patent, licensed by us, was issued to the University by the European Patent Office ("EPO") that provides protection through 2013. Upon issuance of the patent, an opposition was filed by Eli Lilly and Company and in August 2004, an opposition also was filed by GlaxoSmithKline. In cooperation with the University, we responded to the oppositions. At an oral hearing in January 2008, the EPO decided to revoke this patent. One of the reasons cited for the revocation was a filing technicality related to matter added to the original patent application. The EPO decided that the parent application as filed did not provide sufficient basis for several terms that appeared in the final claims of the patent. We subsequently filed a formal appeal of the EPO's decision, which halted the revocation. The patent was scheduled to expire in 2013 and the legal process related to the appeal continued for most of its remaining life, until we withdrew our appeal in July 2011 and the revocation became effective. Given the patent's limited life for commercial protection, we do not deem the EPO's decision for this patent as material to the future of our AMPAKINE technology. The same patent has been issued in the U.S. and remains in force.

Another method-of-use patent licensed by us contains a broad claim for any AMPA-modulating compound to treat schizophrenia. This patent was issued to the University in the U.S. in 1998, and subsequently has been issued in Australia. An additional method-of-use patent, which we co-own with the University, contains a broad claim for any AMPA-modulating compounds combined with antipsychotic

medications to treat schizophrenia and has been issued in Europe. However, in December 2006 we were notified by the EPO that oppositions to this patent were filed by Eli Lilly and Company and another by GlaxoSmithKline. In April 2007, we submitted our written response to the EPO to counter these objections. An oral hearing was held in October 2008 and the EPO ruled in our favor, to maintain the claims of the patent. However, both opponents filed a formal appeal to the EPO's decision. The patent remains enforced throughout the appeal process, and would continue to provide protection through 2018, unless during the appeal process the patent is overturned.

There is no timeframe available for a decision from the EPO and, as a result, the process to determine whether the oppositions filed for this patent will or will not prevail in Europe may take several years to resolve. We do not believe that the European decision for this patent is material to the future of our AMPAKINE technology given the patent's limited life for commercial protection.

In August 2011, we announced the receipt of a notice of allowance from the U.S. Patent and Trademark Office for the patent filed for the use of AMPAKINE compounds for the prevention or treatment of respiratory depression. This patent, licensed exclusively to us by the University of Alberta, issued in October 2011 and provides related patent protection into 2030 for all AMPAKINE compounds, including competitor's compounds, for the treatment of respiratory depression.

Most importantly, we own or have exclusive rights to a large portfolio of composition of matter patents or pending patent applications with much longer patent lives that we believe are fundamental to pharmaceuticals in general and more critical to our commercial protection worldwide. We have filed several new patents for our AMPAKINE compounds that, if granted, will provide patent protection for our new compounds up to 2028.

The patent for our lead compound, AMPAKINE CX1739, and approximately 80 additional compound structures was issued in September 2011. The related patent will expire in May 2028.

AMPAKINE CX717 is included in a composition of matter patent issued in the U.S. that will expire in February 2017 and in similar patents issued or pending in countries throughout the world that will expire in February 2018.

CX2007 and CX2076, part of a chemically distinct series of low impact AMPAKINE compounds, are included in other patent applications filed in the U.S. and worldwide. These patents issued in February 2012 and will expire in August 2028.

Similarly, our high impact AMPAKINE, CX929, is included in a composition of matter patent issued in the U.S. and in pending applications filed worldwide. The patent issued in the U.S. and the patents for the worldwide applications, if issued, would expire in November 2022.

Furthermore, because patent rules and regulations, and burden of proof requirements differ substantially between the U.S. and Europe, specifically in regards to the revocation reason cited by the EPO above, we believe that the decision by the EPO is not likely to impact the patents that have issued in the U.S.

Our rights under the University patents are contingent upon us making certain minimum annual payments to the University, meeting certain milestones and diligently seeking to commercialize the underlying technology. See "Risk Factors – *Risks related to our business* – Our products rely on licenses from research institutions and if we lose access to these technologies or applications, our business would be substantially impaired."

Since issuance of a patent does not guarantee the right to practice the claimed invention, others may obtain patents that we would then need to license or design around in order to practice our patented technologies. We may not be able to obtain licenses that might be required to practice these technologies

due to patents of others on reasonable terms or at all. Additionally, any unpatented manufacture, use or sale of our technology, processes or products may infringe on patents or proprietary rights of others, and we may be unable to obtain licenses or other rights to these other technologies that may be required for commercialization of our proposed products or processes.

Also, we rely to a certain extent upon unpatented proprietary technology and may determine in some cases that our interests would be better served by reliance on trade secrets or confidentiality agreements rather than patents. See "Risk Factors – *Risks related to our industry* – If we fail to secure adequate intellectual property protection, it could significantly harm our financial results and ability to compete" for a discussion of certain risks related to the protection of our intellectual property rights.

Government Regulation

In order to test, produce and market human therapeutic products in the U.S., mandatory procedures and safety standards established by the FDA must be satisfied. Obtaining FDA approval is a costly and time-consuming process. We have initiated Phase I and early Phase II testing in the U.S. and Europe. Some clinical trials were and are performed in the U.S. under Notices of Claimed Investigational Exemption for a New Drug ("IND") filed with the FDA by our clinical collaborators. We filed an IND for the AMPAKINE CX717 and plan to file an IND for CX1739. It is our intent that another pharmaceutical company partner or partners that we are seeking will pursue other required regulatory approvals to conduct further clinical testing with A MPAKINE compounds. However, we intend to file other IND's (and equivalent regulatory filings outside of the U.S.) for additional A MPAKINE compounds to facilitate the development of our Orphan Drug strategy.

Clinical trials are normally conducted in three phases. Phase I trials are concerned primarily with safety of the drug, involve fewer than 100 subjects, and may take from six months to over a year. Phase II trials normally involve a few hundred patients. Phase II trials are designed to demonstrate effectiveness and to determine optimal dosing in treating or diagnosing the disease or condition for which the drug is intended. Short-term side effects and risks in people whose health is impaired also may be examined. Phase III trials may involve up to several thousand patients who have the disease or condition for which the drug is intended, to approximate more closely the conditions of ordinary medical practice. Phase III trials also are designed to clarify the drug's benefit-risk relationship, to uncover less common side effects and adverse reactions, and to generate information for proper labeling of the drug. The FDA receives reports on the progress of each phase of clinical testing, and may require the modification, suspension, or termination of clinical trials if an unwarranted risk is presented to patients. The FDA estimates that the clinical trial period of drug development can take up to ten years, and typically averages six years. With certain exceptions, once clinical testing is completed, the sponsor can submit a New Drug Application for approval to market a drug. The FDA's review of a New Drug Application can also be lengthy.

Therapeutic products that may be developed and sold by us outside the U.S. will be subject to regulation by the various countries in which they are to be distributed. In addition, products manufactured in the U.S. that have not yet been cleared for domestic distribution will require FDA approval in order to be exported to foreign countries for distribution there. See "Risk Factors – *Risks related to our industry* – The regulatory approval process is expensive, time consuming, uncertain and may prevent us from obtaining required approvals for the commercialization of some of our products" for a discussion of certain risks related to the regulatory approval of our products.

We plan to seek additional financing to support our development of selected A MPAKINE compounds for Orphan Drug indications. Without such financing, we may be severely restricted in our overall development. We would be dependent upon our sub-licensees and might be unable to maintain our current core technical and management capabilities. Under such circumstances, we would be dependent upon entering into partnerships or other collaborative arrangements with third parties with the required resources to obtain the needed approvals. We intend to enter into license or other arrangements with other

pharmaceutical companies under which those companies would conduct the required clinical trials and seek FDA approval for most or all of our proposed products. See "Risk Factors – *Risks related to our business* – We may not be able to enter into the strategic alliances necessary to fully develop and commercialize our products and technologies, and we will be dependent on our corporate partners if we do" for a discussion of certain risks related to the proposed strategic alliances that we are seeking.

Competition

The pharmaceutical industry is characterized by rapidly evolving technology and intense competition. Many companies of all sizes, including both major pharmaceutical companies and specialized biotechnology companies, are engaged in activities similar to ours. Most of our competitors have substantially greater financial and other resources and larger research and development staffs. Larger pharmaceutical company competitors also have significant experience in preclinical testing, human clinical trials and regulatory approval procedures.

In addition, colleges, universities, governmental agencies and other public and private research organizations will continue to conduct research. These institutions are becoming more active in seeking patent protection and licensing arrangements to collect license fees, milestone payments and royalties in exchange for license rights to technology that they have developed, some of which may be directly competitive with us.

We expect technological developments in the neuropharmacology field to continue to occur at a rapid rate and expect that competition will remain intense as those advances continue. Based on the technical qualifications, expertise and reputations of our Scientific Directors, consultants and other key scientists, we believe that our operating strategy to develop AMPAKINE compounds for the treatment of selected Orphan Drug indications and to out-license the technology to larger pharmaceutical companies for major chronic indications is appropriate.

Product Liability Insurance

The clinical testing, manufacturing and marketing of our products may expose us to product liability claims, against which we maintain liability insurance. See "Risk Factors – *Risks related to our industry* – We may be subject to potential product liability claims. One or more successful claims brought against us could materially impact our business and financial condition" for a discussion of certain risks related to product liability claims against us.

Employees

We currently have six full-time employees, including three Ph.D.-level or equivalent employees. Of the full-time employees, five are engaged in management and administrative support and one is engaged in research and development.

We do not anticipate significant increases in our employee levels during the next twelve months and will continue to outsource a substantial amount of our development activities to qualified vendors as needed.

Item 1A. Risk Factors

In addition to the other matters set forth in this Annual Report on Form 10-K, our continuing operations and the price of our common stock are subject to the following risks:

Risks related to our business

Our independent registered public accounting firm has expressed substantial doubt about our ability to continue as a going concern.

In its audit opinion issued in connection with our balance sheets as of December 31, 2011 and 2010 and our statements of operations, stockholder's equity and comprehensive income (loss), and cash flows for the years ended December 31, 2011 and 2010, our independent registered public accounting firm has expressed substantial doubt about our ability to continue as a going concern given our limited working capital, recurring net losses and negative cash flows from operations. The accompanying financial statements have been prepared on a going concern basis, which contemplates the realization of assets and the satisfaction of liabilities and commitments in the normal course of business. The financial statements do not include any adjustments relating to the recoverability and classification of recorded asset amounts or amounts of liabilities that might be necessary should we be unable to continue in existence. While we have relied principally in the past on external financing to provide liquidity and capital resources for our operations, we can provide no assurance that cash generated from our operations together with cash received in the future from external financing will be sufficient to enable us to continue as a going concern.

We have a history of net losses; we expect to continue to incur net losses and we may never achieve or maintain profitability.

Since our formation on February 10, 1987 through the end of our most recent fiscal year ended December 31, 2011, we have generated only modest operating revenues and we have incurred net losses approximating $116,390,000. For the fiscal year ended December 31, 2011, our net loss approximated $2,255,000 and as of December 31, 2011, we had an accumulated deficit of approximately $120,769,000. For the year ended December 31, 2010, our net income of $1,629,000 resulted from revenues from our March 2010 transaction with Biovail. We have not generated any revenue from product sales to date, and it is possible that we will never generate revenues from product sales in the future. Even if we do achieve significant revenues from product sales, we expect to incur significant operating losses over the next several years. As with other companies in the biotechnology industry, it is possible that we will never achieve profitable operations.

We will need additional capital in the future and, if such capital is not available on terms acceptable to us or available to us at all, we may need to scale back our research and development efforts and may be unable to continue our business operations.

We will require substantial additional funds to advance our research and development programs and to continue our operations, particularly if we decide to independently conduct later-stage clinical testing and apply for regulatory approval of any of our proposed products, and if we decide to independently undertake the marketing and promotion of our products. Additionally, we may require additional funds in the event that we decide to pursue strategic acquisitions of or licenses for other products or businesses. Based on our current operating plan, we estimate that our existing cash resources will be sufficient to meet our requirements into the second quarter of 2012. We believe that we will require additional capital to fund on-going operations beyond that time. Additional funds may result from agreements with larger pharmaceutical companies that include the license or rights to the technologies and products that we are currently developing, although there is no assurance that we will secure such a transaction in a timely manner, or at all. Additional funds also may result from the exercise of warrants to

purchase shares of our common stock. As of December 31, 2011, warrants to purchase up to approximately 25.8 million shares of our common stock were outstanding at exercise prices ranging from $0.10 to $3.96 per share. If these warrants are fully exercised, of which there can be no assurance, such exercise would provide approximately $18,000,000 of additional capital. None of the outstanding warrants as of December 31, 2011 were "in the money" as of such date.

Our cash requirements in the future may differ significantly from our current estimates, depending on a number of factors, including:

- the results of our clinical trials;
- the time and costs involved in obtaining regulatory approvals;
- the costs of setting up and operating our own marketing and sales organization;
- the ability to obtain funding under contractual and licensing agreements;
- the costs involved in obtaining and enforcing patents or any litigation by third parties regarding intellectual property; and
- our success in entering into collaborative relationships with other parties.

To finance our future activities, we may seek funds through additional rounds of financing, including private or public equity or debt offerings and collaborative arrangements with corporate partners. We cannot say with any certainty that we will be able to obtain the additional needed funds on reasonable terms, or at all. The sale of additional equity or convertible debt securities could result in additional dilution to our stockholders. If we issued preferred equity or debt securities, these securities could have rights superior to holders of our common stock, and such instruments entered into in connection with the issuance of securities could contain covenants that will restrict our operations. We might have to obtain funds through arrangements with collaborative partners or others that may require us to relinquish rights to our technologies, product candidates or products that we otherwise would not relinquish. In early March 2009 and again in August 2011, we reduced our workforce in an effort to conserve our capital resources. If adequate funds are not available in the future, as required, we could lose our key employees and might have to further delay, scale back or eliminate one or more of our research and development programs, which would impair our future prospects. In addition, we may be unable to meet our research spending obligations under our existing licensing agreements and may be unable to continue our business operations.

Our products rely on licenses from research institutions and if we lose access to these technologies or applications, our business would be substantially impaired.

Under our agreements with The Regents of the University of California, we have exclusive rights to AMPAKINE compounds for all applications for which the University has patent rights, other than endocrine modulation.

In connection with our March 2010 transaction with Biovail, we consented to The Regents of the University of California providing Biovail a non-exclusive license to the University's patent rights for AMPAKINE compounds for use in the field of respiratory depression or vaso-occlusive crises associated with sickle cell disease. As part of our agreement to reacquire our assets and rights from Biovail in March 2011, the non-exclusive license of these rights to Biovail was terminated and the related rights were returned to us.

Under a patent license agreement with The Governors of the University of Alberta, we had exclusive rights to the use of AMPAKINE compounds to prevent and treat respiratory depression induced by opiate analgesics, barbiturates and anesthetic and sedative agents. In connection with our transaction with Biovail, we assigned our rights under our patent license agreement with the University of Alberta to Biovail. However, we retained our ability to continue to pursue AMPAKINE compounds as a potential treatment for sleep apnea disorders. As part of our agreement to reacquire our assets from Biovail in March 2011, the rights assigned to Biovail under our patent license agreement with the University of Alberta were returned to us.

Our rights to certain of the AMPAKINE compounds are secured by patents or patent applications owned wholly by The Regents of the University of California or by the University as a co-owner with us. Our existing agreements with The Regents of the University of California require the University to prepare, file, prosecute and maintain patent applications related to our licensed rights at our expense. Such agreements also require us to make certain minimum annual payments, meet certain milestones or diligently seek to commercialize the underlying technology.

Under such agreements, we are required to make minimum annual royalty payments of approximately $70,000. Separately, we are required to spend a minimum of $250,000 per year to advance the AMPAKINE compounds until we begin marketing an AMPAKINE compound. The commercialization efforts in the agreements require us to file for regulatory approval of an AMPAKINE compound before October 2012. In March 2011, the University agreed to extend the required date for filing regulatory approval of an AMPAKINE compound to October 2015.

Although we currently are in compliance with our diligence obligations under the agreements with The Regents of the University of California, we are not in compliance with our minimum annual payments for 2012. If we do not make the minimum annual payments, the University could provide us with written notice and the opportunity to repair the noncompliance. If we do not subsequently repair the noncompliance within the provided timeframe, it could allow the University to terminate that particular agreement. Management believes that it maintains a strong relationship with The Regents of the University of California.

We are at an early stage of development and we may not be able to successfully develop and commercialize our products and technologies.

The development of AMPAKINE products is subject to the risks of failure commonly experienced in the development of products based upon innovative technologies and the expense and difficulty of obtaining approvals from regulatory agencies. Drug discovery and development is time consuming, expensive and unpredictable. On average, only one out of many thousands of chemical compounds discovered by researchers proves to be both medically effective and safe enough to become an approved medicine. In the fields that we target, approximately one in ten compounds placed in clinical trials generally reaches the market. All of our proposed products are in the preclinical or early clinical stage of development and will require significant additional funding for research, development and clinical testing before we are able to submit them to any of the regulatory agencies for clearances for commercial use. Our trials that are subject to our collaborative research arrangements are being funded by third parties and do not involve financial commitments from us.

The process from discovery to development to regulatory approval can take several years and drug candidates can fail at any stage of the process. Late stage clinical trials often fail to replicate results achieved in earlier studies. Historically, in our industry more than half of all compounds in development failed during Phase II trials and 30% failed during Phase III trials. We cannot assure you that we will be able to complete successfully any of our research and development activities. Even if we do complete them, we may not be able to market successfully any of the products or be able to obtain the necessary regulatory approvals or assure that healthcare providers and payors will accept our products. We also face the risk that any or all of our products will not work as intended or that they will be unsafe, or that, even if they do work and are safe, that our products will be uneconomical to manufacture and market on a

large scale. Due to the extended testing and regulatory review process required before we can obtain marketing clearance, we do not expect to be able to commercialize any therapeutic drug for several years, either directly or through our corporate partners or licensees.

We may not be able to enter into the strategic alliances necessary to fully develop and commercialize our products and technologies, and we will be dependent on our corporate partners if we do.

We are seeking pharmaceutical company partners to develop other major indications for the A MPAKINE compounds. These agreements would potentially provide us with additional funds in exchange for exclusive or non-exclusive license or other rights to the technologies and products that we are currently developing. Competition between biopharmaceutical companies for these types of arrangements is intense. Although we have been engaged in discussions with candidate companies for some time, we cannot give any assurance that these discussions will result in an agreement or agreements in a timely manner, or at all. Additionally, we cannot assure you that any resulting agreement will generate sufficient revenues to offset our operating expenses and longer-term funding requirements.

Risks related to our industry

If we fail to secure adequate intellectual property protection, it could significantly harm our financial results and ability to compete.

Our success will depend, in part, on our ability to obtain and maintain patent protection for our products and processes in the U.S. and elsewhere. We have filed and intend to continue to file patent applications as we need them. However, additional patents that may issue from any of these applications may not be sufficiently broad to protect our technology. Also, any patents issued to us or licensed by us may be designed around or challenged by others, and if such challenge is successful, it may diminish our rights.

If we are unable to obtain and maintain sufficient protection of our proprietary rights in our products or processes prior to or after obtaining regulatory clearances, our competitors may be able to obtain regulatory clearance and market competing products by demonstrating the equivalency of their products to our products. If they are successful at demonstrating the equivalency between the products, our competitors would not have to conduct the same lengthy clinical tests that we have conducted.

We also rely on trade secrets and confidential information that we try to protect by entering into confidentiality agreements with other parties. Those confidentiality agreements may be breached, and our remedies may be insufficient to protect the confidential information. Further, our competitors may independently learn our trade secrets or develop similar or superior technologies. To the extent that our consultants, key employees or others apply technological information independently developed by them or by others to our projects, disputes may arise regarding the proprietary rights to such information. We cannot assure you that such disputes will be resolved in our favor.

We may be subject to potential product liability claims. One or more successful claims brought against us could materially impact our business and financial condition.

The clinical testing, manufacturing and marketing of our products may expose us to product liability claims. We maintain liability insurance with coverage limits of $10 million per occurrence and $10 million in the annual aggregate. We have never been subject to a product liability claim, and we require each patient in our clinical trials to sign an informed consent agreement that describes the risks related to the trials, but we cannot assure you that the coverage limits of our insurance policies will be adequate or that one or more successful claims brought against us would not have a material adverse effect on our business, financial condition and result of operations. Further, if one of our A MPAKINE compounds is approved by the FDA for marketing, we cannot assure you that adequate product liability insurance will be available, or if available, that it will be available at a reasonable cost. Any adverse

outcome resulting from a product liability claim could have a material adverse effect on our business, financial condition and results of operations.

We face intense competition that could result in products that are superior to the products that we are developing.

Our business is characterized by intensive research efforts. Our competitors include many companies, research institutes and universities that are working in a number of pharmaceutical or biotechnology disciplines to develop therapeutic products similar to those we are currently investigating. Most of these competitors have substantially greater financial, technical, manufacturing, marketing, distribution and/or other resources than we do. In addition, many of our competitors have experience in performing human clinical trials of new or improved therapeutic products and obtaining approvals from the FDA and other regulatory agencies. We have no experience in conducting and managing later-stage clinical testing or in preparing applications necessary to obtain regulatory approvals. Accordingly, it is possible that our competitors may succeed in developing products that are safer or more effective than those that we are developing and may obtain FDA approvals for their products faster than we can. We expect that competition in this field will continue to intensify.

We may be unable to recruit and retain our senior management and other key technical personnel on whom we are dependent.

We are highly dependent upon senior management and key technical personnel and currently do not carry any insurance policies on such persons. In particular, we are highly dependent on our Executive Chairman, Roger G. Stoll, Ph.D.; our President and Chief Executive Officer, Mark A. Varney, Ph.D.; and our Vice President of Preclinical Development, Steven A. Johnson, Ph.D., all of whom have entered into employment agreements with us. Competition for qualified employees among pharmaceutical and biotechnology companies is intense. The loss of any of our senior management, or our inability to attract, retain and motivate the additional highly-skilled employees and consultants that our business requires, could substantially hurt our business and prospects.

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

The FDA and other similar agencies in foreign countries have substantial requirements for therapeutic products. Such requirements often involve lengthy and detailed laboratory, clinical and post-clinical testing procedures and are expensive to complete. It often takes companies many years to satisfy these requirements, depending on the complexity and novelty of the product. The review process is also extensive, which may delay the approval process even more. According to the Pharmaceutical Research and Manufacturers of America, historically the cost of developing a new pharmaceutical from discovery to approval was approximately $800 million, and this amount is expected to increase annually.

As of yet, we have not obtained any approvals to market our products. Further, we cannot assure you that the FDA or other regulatory agency will grant us approval for any of our products on a timely basis, if at all. Even if regulatory clearances are obtained, a marketed product is subject to continual review, and later discovery of previously unknown problems may result in restrictions on marketing or withdrawal of the product from the market.

Other risks

Our stock price may be volatile and our common stock could decline in value.

The market price of securities of life sciences companies in general has been very unpredictable. The range of sales prices of our common stock for the fiscal years ended December 31, 2011 and 2010, as quoted on the Over the Counter Bulletin Board was $0.05 to $0.19 and $0.09 to $0.25, respectively. The following factors, in addition to factors that affect that market generally, could significantly impact our business, and the market price of our common stock could decline:

- competitors announcing technological innovations or new commercial products;
- competitors' publicity regarding actual or potential products under development;
- regulatory developments in the U.S. and foreign countries;
- developments concerning proprietary rights, including patent litigation;
- public concern over the safety of therapeutic products; and
- changes in healthcare reimbursement policies and healthcare regulations.

There is a large number of shares of the Company's common stock that may be issued or sold, and if such shares are issued or sold, the market price of our common stock may decline.

As of March 23, 2012, we had approximately 85.6 million shares of our common stock outstanding.

If all warrants and options outstanding as of March 23, 2012 are exercised prior to their expiration, up to approximately 33.6 million additional shares of our common stock could become freely tradable. Such sales of substantial amounts of common stock in the public market could adversely affect the prevailing market price of our common stock and could also make it more difficult for us to raise funds through future offerings of common stock.

Our charter document may prevent or delay an attempt by our stockholders to replace or remove management.

Certain provisions of our restated certificate of incorporation, as amended, could make it more difficult for a third party to acquire control of our business, even if such change in control would be beneficial to our stockholders. Our restated certificate of incorporation, as amended, allows the Board of Directors of the Company, referred to as the Board or Board of Directors, to issue up to 3,507,500 shares of preferred stock without stockholder approval. The ability of our Board of Directors to issue additional preferred stock may have the effect of delaying or preventing an attempt by our stockholders to replace or remove existing directors and management.

If our common stock is determined to be a "penny stock," a broker-dealer may find it more difficult to trade our common stock and an investor may find it more difficult to acquire or dispose of our common stock in the secondary market.

In addition, our common stock may be subject to the so-called "penny stock" rules. The SEC has adopted regulations that define a "penny stock" to be any equity security that has a market price per share of less than $5.00, subject to certain exceptions, such as any securities listed on a national securities exchange. For any transaction involving a "penny stock," unless exempt, the rules impose additional sales practice requirements on broker-dealers, subject to certain exceptions. If our common stock is determined to be a "penny stock," a broker-dealer may find it more difficult to trade our common stock and an investor may find it more difficult to acquire or dispose of our common stock on the secondary market.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

We lease approximately 32,000 square feet of office, research laboratory and expansion space in Irvine, California, under an operating lease that expires May 31, 2012. Current monthly rent on these facilities is approximately $47,000. We believe that our current facilities will be adequate and suitable for our research and development activities for at least the remainder of the lease term.

Item 3. Legal Proceedings

We are not a party to any material legal proceedings, nor has any material proceeding been terminated during the fiscal year ended December 31, 2011.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

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

Effective December 14, 2009, our common stock began quoting on the Over the Counter Bulletin Board, referred to as OTCBB, under the symbol "CORX.OB". Prior to that date, our common stock traded on the NYSE Amex (formerly, The American Stock Exchange) under the symbol "COR". The following table presents quarterly information on the high and low sales prices of the common stock furnished by the OTCBB for the fiscal years ended December 31, 2011 and 2010. The quotations on the OTCBB reflect inter-dealer prices, without retail mark-up, mark-down or commission and may not necessarily represent actual transactions.

	High	Low
Fiscal Year ended December 31, 2011		
Fourth Quarter	$ 0.10	$ 0.05
Third Quarter	0.11	0.05
Second Quarter	0.16	0.06
First Quarter	0.19	0.13
Fiscal Year ended December 31, 2010		
Fourth Quarter	$ 0.21	$0.15
Third Quarter	0.18	0.14
Second Quarter	0.24	0.16
First Quarter	0.25	0.09

As of March 20, 2012, there were 394 stockholders of record of our common stock, and approximately 8,000 beneficial owners. The high and low sales prices for our common stock on March 20, 2012, as quoted on the OTCBB, were $0.11 and $0.09, respectively.

We have never paid cash dividends on our common stock and do not anticipate paying such dividends in the foreseeable future. The payment of dividends, if any, will be determined by the Board in light of conditions then existing, including our financial condition and requirements, future prospects, restrictions in financing agreements, business conditions and other factors deemed relevant by the Board.

During the fiscal year ended December 31, 2011, we did not repurchase any of our securities.

Item 6. Selected Financial Data

Not applicable to smaller reporting company.

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

The following discussion and analysis should be read in conjunction with the audited financial statements and notes related thereto appearing elsewhere herein.

Critical Accounting Policies and Management Estimates

The SEC defines critical accounting policies as those that are, in management's view, most important to the portrayal of our financial condition and results of operations and most demanding of their judgment. Our discussion and analysis of our financial condition and results of operations are based upon our financial statements, which have been prepared in accordance with accounting principles generally accepted in the U.S. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses and related disclosures of contingent assets and liabilities.

We base our estimates on historical experience and on various other assumptions that are believed to be reasonable under the circumstances. This process forms the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

Revenue Recognition

We recognize revenue when all four of the following criteria are met: (i) pervasive evidence that an arrangement exists; (ii) delivery of the products and/or services has occurred; (iii) the fees earned can be readily determined; and (iv) collectibility of the fees is reasonably assured.

Amounts received for upfront technology license fees under multiple-element arrangements are deferred and recognized over the period of committed services or performance, if such arrangements require our on-going services or performance.

We record research grant revenues as the expenses related to the grant projects are incurred. Amounts received under research grants are nonrefundable, regardless of the success of the underlying research, to the extent that such amounts are expended in accordance with the approved grant project.

Employee Stock Options and Stock-Based Compensation

All share-based payments to employees, including grants of employee stock options, are recognized in the financial statements based on their fair values.

Stock options and warrants issued to consultants and other non-employees as compensation for services to be provided to us are accounted for based upon the fair value of the services provided or the estimated fair value of the option or warrant, whichever can be more clearly determined. We recognize this expense over the period the services are provided.

Convertible Debt and Equity Instruments

We review the features of our issued financing instruments to determine whether such instruments are appropriately measured and classified as either debt or equity in our financial statements. Generally, instruments that include a provision that may require settlement in cash are recorded as a liability.

The conversion features within our issued convertible instruments are valued separately from the preferred stock or debt securities. We allocate the proceeds received from a financing transaction that includes a convertible instrument to the convertible preferred stock or debt and any detachable instruments, such as warrants, on a relative fair value basis.

The value allocated to the convertible instrument is used to estimate an effective conversion price for the convertible preferred stock or debt, and to measure the intrinsic value, if any, of the conversion feature on the date that we issue the securities.

The above listing is not intended to be a comprehensive list of all of our accounting policies. In many cases, the accounting treatment of a particular transaction is specifically dictated by accounting principles generally accepted in the U.S., with no need for management's judgment in their application. There are also areas in which management's judgment in selecting any available alternative would not produce a materially different result. See our audited financial statements and notes thereto which begin on page F-1 of this Annual Report on Form 10-K, which contain accounting policies and other disclosures required by accounting principles generally accepted in the U.S.

Going Concern

Our independent registered public accounting firm has expressed substantial doubt as to our ability to continue as a going concern, in its report for the fiscal year ended December 31, 2011, given that we do not have adequate working capital to finance our day-to-day operations for a period of at least twelve months. Our continued existence depends upon the success of our efforts to raise additional capital necessary to meet our obligations as they become due and to obtain sufficient capital to execute our business plan. We intend to obtain capital primarily through issuances of debt or equity or entering into collaborative or merger agreements with other pharmaceutical companies. There can be no assurance that we will be successful in completing additional financing or strategic transactions. If we cannot obtain adequate funding, we may be required to significantly curtail or even shut down our operations.

Results of Operations

General

In October 2000, we entered into a research collaboration agreement and an exclusive license agreement with Les Laboratoires Servier ("Servier"). The license agreement allowed Servier to develop and commercialize select A MPAKINE compounds for the treatment of (i) declines in cognitive performance associated with aging, (ii) neurodegenerative diseases and (iii) anxiety disorders. The indications covered include, but are not limited to, Alzheimer's disease, mild cognitive impairment, sexual dysfunction, and the dementia associated with multiple sclerosis and Amyotrophic Lateral Sclerosis. The research collaboration agreement, as amended up until June 2011, included an up-front payment by Servier of $5,000,000 and research support payments of approximately $2,025,000 per year through early December 2006 (subject to us providing agreed-upon levels of research personnel). In October 2002, Servier agreed to provide us with $4,000,000 of additional research support, in exchange for rights to our A MPAKINE compounds for the potential treatment of anxiety disorders in Servier's licensed territories.

In early December 2006, we terminated the research collaboration with Servier and as a result the worldwide rights for the A MPAKINE technology for treatment of neurodegenerative diseases were returned to us, other than three compounds selected by Servier for commercialization. In November 2010, Servier selected a jointly discovered high impact AMPAKINE compound, CX1632 (S47445) to advance into Phase I clinical testing.

In June 2011, we entered into a new agreement with Servier to sell our remaining rights to CX1632. Servier provided an immediate, non-refundable payment of $1,000,000 to us for the option to expand its rights to the compound. In late September 2011, Servier exercised its option for CX1632.

Shortly thereafter, Servier paid us an additional $2,000,000 and assumed our obligation to pay certain royalties and milestone payments to the University of California, from whom we have licensed

rights to the AMPAKINE technology. We assigned our rights to our patents and patent applications for CX1632 and Servier acquired sole ownership of the global patent rights to the compound, along with a sub-license of our rights to all indications licensed from the University of California for use with CX1632. Following the exercise of the option, we will not be entitled to any royalties or further payments from Servier's development and commercialization of CX1632. However, we retain all rights for the remaining AMPAKINE technology that was previously subject to the agreements with Servier on a worldwide basis.

In March 2010, we entered into an asset purchase agreement with Biovail Laboratories International SRL ("Biovail"). Pursuant to the asset purchase agreement, Biovail acquired our interests in CX717, CX1763, CX1942 and the injectable dosage form of CX1739, as well as certain of our other AMPAKINE compounds and related intellectual property for use in the field of respiratory depression or vaso-occlusive crises associated with sickle cell disease. In connection with the transaction, Biovail paid us $10,000,000. In addition, the agreement provided us with the right to receive up to three milestone payments in an aggregate amount of up to $15,000,000 plus the reimbursement of certain related expenses, each conditioned upon the occurrence of particular events relating to the clinical development of certain assets that Biovail acquired.

As part of the transaction, Biovail licensed back to us certain exclusive and irrevocable rights to some acquired AMPAKINE compounds for use outside of the field of respiratory depression or vaso-occlusive crises associated with sickle cell disease. Accordingly, following the transaction with Biovail, we retained rights for the majority of patented compounds in our AMPAKINE drug library, as well as all rights to the non-acquired AMPAKINE compounds for the treatment of neurological diseases and psychiatric disorders that have historically been a focus of our portfolio. Additionally, we retained our rights to develop and commercialize AMPAKINE compounds as a potential treatment for sleep apnea disorders, including an oral dosage form of CX1739.

In September 2010, Biovail's parent corporation, Biovail Corporation, combined with Valeant Pharmaceuticals International in a merger transaction and the combined company was renamed "Valeant Pharmaceuticals International, Inc." ("Valeant"). Following the merger, Valeant and Biovail conducted a strategic and financial review of the product pipeline and, in November 2010, Biovail announced its intent to exit from the respiratory depression project acquired from us in March 2010.

Following that announcement, we immediately entered into discussions with Biovail regarding the future of the respiratory depression project. In March 2011, we entered into a new agreement with Biovail to reacquire the AMPAKINE compounds, patents and rights that Biovail acquired from us in March 2010. The new agreement included an upfront payment by us of $200,000 and potential future payments of up to $15,150,000 based upon the achievement of certain development and New Drug Application submission and approval milestones. Biovail is also eligible to receive additional payments of up to $15,000,000 based upon our net sales of an intravenous dosage form of the compounds for respiratory depression.

In addition, at any time following the completion of Phase I clinical studies and prior to the end of Phase IIa clinical studies, Biovail retains an option to co-develop and co-market intravenous dosage forms of an AMPAKINE compound as a treatment for respiratory depression and vaso-occlusive crises associated with sickle cell disease. In such an event, we would be reimbursed for certain development expenses to date and Biovail would share in all such future development costs with us. If Biovail makes the co-marketing election, we would owe no further milestone payments to Biovail and we would be eligible to receive a royalty on net sales of the compound by Biovail or its affiliates and licensees.

From our date of organization of February 10, 1987 through the end of our most recent fiscal year ended on December 31, 2011, we sustained losses approximating $116,390,000. Due to projected fluctuations in funding, continuing losses are likely over the next several years, as our ongoing operating expenses will only be offset, if at all, by possible payments under planned strategic alliances that we are

seeking with other pharmaceutical companies for the clinical development, manufacturing and marketing of our products. The nature and timing of payments to us under planned strategic alliances, if and when entered into, are likely to significantly affect our operations and financing activities and to produce substantial period-to-period fluctuations in reported financial results. Over the longer term, we will require successful commercial development of our products by our prospective partners to attain sustained profitable operations from royalties or other product-based revenues.

We believe that inflation and changing prices have not had a material impact on our ongoing operations to date.

Year ended December 31, 2011 and 2010

For the fiscal year ended December 31, 2011, our net loss of approximately $2,255,000 compares with our net income of approximately $1,629,000 for the corresponding prior year period.

License revenues for the year ended December 31, 2011 represent the $3,000,000 received under our option agreement with Servier for the jointly discovered AMPAKINE CX1632 (See Note 5 of Notes to Financial Statements).

Revenues for the year ended December 31, 2010 include amounts related to our March 2010 transaction with Biovail. As detailed above, we received $10,000,000 in connection with the transaction, including $9,000,000 upon execution of the asset purchase agreement and an additional $1,000,000 upon completion of the specified transfer plan in September 2010.

Grant revenues for both periods include amounts awarded by the Michael J. Fox Foundation for Parkinson's Research. The related grant will provide funding to test select AMPAKINE compounds for their ability to restore brain function in animal models of Parkinson's disease.

Grant revenues for 2010 also include approximately $245,000 awarded under a program created by the U.S. Congress in the Patient Protection and Affordable Care Act of 2010. The grant reimbursed certain qualifying expenses related to our AMPAKINE CX1739.

For the year ended December 31, 2011, our research and development expenses decreased from approximately $3,739,000 to approximately $2,188,000, or by 41%, with the prior year including sublicense payments approximating $940,000 related to our transaction with Biovail. Expenses for the year ended December 31, 2011 include our $200,000 payment to reacquire the AMPAKINE rights and compounds from Biovail in March 2011, along with sublicensing fees of $160,000 related to the June 2011 and October 2011 transactions with Servier. See Note 5 of Notes to Financial Statements.

Other costs related to the access and protection of our AMPAKINE technology totaled approximately $636,000 and $544,000 for the years ended December 31, 2011 and 2010, respectively, with the amounts for the 2010 period reflecting a change in estimate of accrued clinical expenses from prior periods. For the years ended December 31, 2011 and 2010, our expenses for research and development personnel, outside experts and consultants approximated $675,000 and $1,373,000, respectively, with most of the decrease due to a decrease in personnel-related expenses. Costs for laboratory facility and supply expenses were approximately $469,000 and $481,000 for the years ended December 31, 2011 and 2010, respectively.

Amounts incurred for our internal research and development costs, including indirect amounts allocated to research and development, and costs for retaining outside experts for consulting and research activities are deemed to benefit the entire AMPAKINE platform rather than specific AMPAKINE compounds.

For the year ended December 31, 2011, our non-cash stock compensation charges for research and development amounted to a credit of approximately $81,000 compared to charges of approximately $63,000 for the prior year period, with the difference reflecting recovered amounts related to previously forfeited options.

Clinical development expenses of approximately $129,000 for the year ended December 31, 2011 include amounts related to our Phase IIa proof of concept study with AMPAKINE CX1739 in sleep apnea. For the year ended December 31, 2010, clinical development expenses of $338,000 included amounts for the sleep apnea study, along with amounts incurred for our earlier completed Phase II studies with A MPAKINE CX717. As stated above, CX717 was sold in our transaction that we completed with Biovail in March 2010 and subsequently reacquired by us in March 2011.

At this time, we are just beginning the clinical development of CX1739 and the preclinical development of backup candidates. Subject to the availability of sufficient finances, as the clinical development of CX1739 expands, our research and development costs are anticipated to increase significantly. External preclinical and clinical expenses to date through December 31, 2011 for CX717 and CX1739 amounted to approximately $16,000,000 and $4,000,000, respectively.

Our general and administrative expenses for the year ended December 31, 2011 decreased from approximately $4,553,000 to approximately $3,189,000, or by 30%, compared to the prior year period, mostly reflecting legal and investment banking fees related to the March 2010 transaction that we completed with Biovail, along with fees for an increased use of advisory consultants to assist us in identifying strategic opportunities.

For the year ended December 31, 2011, our non-cash stock compensation charges within general and administrative expenses decreased from approximately $245,000 to approximately $131,000, or by 47%, relative to the prior year, primarily due to the completed vesting schedules of earlier granted options.

For the year ended December 31, 2011, net interest income of approximately $7,000 compares with net interest expense of approximately $553,000 for the prior year.

Net interest expense for the year ended December 31, 2010 includes interest on our convertible promissory note that we issued to Samyang Optics Co., Ltd., or Samyang, in January 2010, and charges for the amortization of capitalized offering costs and the beneficial conversion feature recorded in connection with the transaction.

Accelerated amortization charges for the offering costs and the beneficial conversion feature were recorded upon Samyang's conversion of the promissory note in June 2010, along with non-cash charges for the allocated value of warrants issued to Samyang upon the note's conversion. See Note 3 of Notes to Financial Statements.

Liquidity and Capital Resources

Pursuant to the terms of our transaction with Biovail in March 2010, Biovail paid us $10,000,000. Additionally, the March 2010 transaction included rights to receive milestone payments and expense reimbursements from Biovail. However, pursuant to the terms of our March 2011 asset repurchase transaction with Biovail, we are no longer entitled to receive any future milestone payments or expense reimbursements from Biovail. Rather, as disclosed earlier in this Annual Report on Form 10-K, as a result of the March 2011 transaction we are obligated to make future payments to Biovail depending upon the occurrence of particular events relating to the clinical development of the repurchased assets.

We may receive proceeds from the exercise of previously issued warrants to purchase shares of our common stock. The table below summarizes the warrants that remain outstanding as of December 31, 2011 that were issued in connection with prior offerings and placements of our common stock.

Date of Issuance	Exercise Price per Share	Number of Warrants Outstanding as of December 31, 2011	Expiration Date	Approximate Potential Proceeds, if Fully Exercised
January 2007[1]	$1.66	2,996,927	January 21, 2012	$4,975,000
August 2007[1]	$ 2.64	2,830,000	August 28, 2012	$ 7,471,000
August 2007[2]	$ 3.96	176,875	August 28, 2012	$ 700,000
April 2009[1]	$ 0.27	6,941,176	October 17, 2012	$1,889,000
April 2009[2]	$ 0.26	433,824	October 17, 2012	$ 113,000
July 2009[1]	$ 0.27	6,060,470	January 31, 2013	$1,636,000
July 2009[2]	$ 0.37	606,047	January 31, 2013	$ 222,000
June 2010[1][3]	$ 0.21	4,081,633	June 7, 2012	$ 840,000
October 2011[1][3]	$ 0.10	1,691,367	October 20, 2013	$ 175,000

(1) Represents warrants issued to the investor(s) in the related transaction.
(2) Represents warrants issued to the placement agent(s) in the related transaction.
(3) See Note 3 to Notes to the Financial Statements.

Warrants detailed above with a January 2007 date of issuance subsequently expired unexercised in January 2012. Warrants detailed above with issuance dates between August 2007 and July 2009 may be settled by a cashless exercise. In such an event, the holder of the warrants would receive a number of unregistered shares representing the gain on exercise of such warrants, divided by the volume weighted average price of the Company's common stock on the trading day immediately preceding such exercise.

None of the warrants detailed above are "in-the-money" as of December 31, 2011. We can give no assurance that we will receive proceeds from the exercise of any of the outstanding warrants.

Cash Position

As of December 31, 2011, we had cash and cash equivalents totaling approximately $1,611,000 and working capital of approximately $600,000. As of December 31, 2010, we had cash, cash equivalents and marketable securities totaling approximately $3,031,000 and working capital of approximately $2,120,000. The decreases in cash, cash equivalents and marketable securities, and working capital reflect amounts required to fund operations partially offset by amounts received from our amended and restated agreement with Servier.

We believe that we have adequate financial resources to conduct our operations into the second quarter of 2012.

Our ongoing cash requirements will depend on numerous factors, particularly the progress of our clinical trials involving CX1739 and our ability to negotiate and complete collaborative agreements or out-licensing arrangements. In order to help fund our on-going operating cash requirements, we intend to seek new collaborations for our "low impact" and "high impact" AMPAKINE programs that include initial cash payments and on-going development support. We may also seek to raise additional funds and explore other strategic and financial alternatives, such as a merger transaction with another pharmaceutical company.

There are significant uncertainties as to our ability to access potential sources of capital. We may not be able to enter into any collaboration on terms acceptable to us, or at all, due to conditions in the pharmaceutical industry or in the economy in general. Competition for such arrangements is intense, with a large number of biopharmaceutical companies attempting to secure alliances with more established pharmaceutical companies. Although we have been engaged in discussions with candidate companies, there is no assurance that an agreement or agreements will arise from these discussions in a timely manner, or at all, or that revenues that may be generated thereby will offset operating expenses sufficiently to reduce our short-term funding requirements.

Even if we are successful in obtaining a collaboration for our A MPAKINE program, we may have to relinquish rights to technologies, product candidates or markets that we might otherwise seek to develop ourselves. These same risks apply to any attempt to out-license our compounds.

Similarly, due to market conditions, the illiquid nature of our stock and other possible limitations on equity offerings, we may not be able to sell additional securities or raise other funds on terms acceptable to us, if at all. Any additional equity financing, if available, would likely result in substantial dilution to existing stockholders.

For the year ended December 31, 2011, net cash used in operating activities was approximately $1,936,000, and included our net loss for the period of approximately $2,255,000, adjusted for non-cash expenses for depreciation, adjustment to fair value of fixed assets and stock compensation charges aggregating approximating $201,000, and changes in operating assets and liabilities. Net cash provided by operating activities was approximately $1,339,000 during the year ended December 31, 2010, and included our net income for the period of approximately $1,629,000, adjusted for non-cash expenses for depreciation, amortization, warrant and stock compensation charges aggregating approximately $936,000, and changes in operating assets and liabilities.

Net cash provided by investing activities was approximately $2,031,000 for the year ended December 31, 2011, and primarily represented the proceeds from the maturity of marketable securities. For the year ended December 31, 2010, net cash used in investing activities approximated $2,000,000, and mostly resulted from the purchase of marketable securities and fixed assets of approximately $2,662,000 and $51,000, respectively, partially offset by the maturity of marketable securities of approximately $610,000 and the proceeds from the sales of fixed assets totaling approximately $63,000.

For the year ended December 31, 2011, net cash provided by financing activities totaled approximately $478,000, and resulted from our October 2011 private placement of common stock and warrants to purchase common stock. For the year ended December 31, 2010, net cash provided by financing activities approximated $1,472,000, and reflected proceeds from our private placement of a convertible promissory note in January 2010.

Commitments

We lease approximately 32,000 square feet of research laboratory, office and expansion space under an operating lease that expires May 31, 2012. The commitments under the lease agreement for the five months ending May 31, 2012 are approximately $248,000. We are currently exploring our leasing alternatives for smaller available space.

Under our agreements with academic institutions, we are required to make minimum annual royalty payments approximating $70,000. Commitments for preclinical and clinical development expenses approximate $174,000, nearly all of which is payable within the next twelve months.

In June 2000, we received $247,300 from the Institute for the Study of Aging (the “Institute”), a non-profit foundation supported by the Estee Lauder Trust. The advance partially offset our limited costs

for our testing in patients with MCI that we conducted with our former partner, Servier. Provided that we comply with the conditions of the funding agreement, including the restricted use of the amounts received, repayment of the advance has been extended until we enter an A MPAKINE compound into Phase III clinical trials for Alzheimer's disease. Upon such potential clinical trials, repayment would include interest computed at a rate equal to one-half of the prime lending rate. In lieu of cash, in the event of repayment the Institute may elect to receive the balance of outstanding principal and accrued interest as shares of our common stock. The conversion price for such form of repayment shall initially equal $4.50 per share, subject to adjustment under certain circumstances.

Staffing

As of December 31, 2011, we had six full-time employees. We do not anticipate significant increases in the number of our full-time employees within the coming year.

Plant and Equipment

We expect that we will require modest investments in plant and equipment within the coming year.

Off-Balance Sheet Arrangements

We do not currently have any off-balance sheet arrangements within the meaning of Item 303(a)(4) of Regulation S-K.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Not applicable for smaller reporting company.

Item 8. Financial Statements and Supplementary Data

Our financial statements and other information required by this item are set forth herein in a separate section beginning with the Index to Financial Statements on page F-1.

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

Not applicable.

Item 9A. Controls and Procedures

Disclosure Controls and Procedures

We maintain disclosure controls and procedures (as defined in Rules 13a-15(e) and 15(d)-15(e) under the Exchange Act) that are designed to ensure that information required to be disclosed in our reports under the Exchange Act, is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

We carried out an evaluation, under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of our "disclosure controls and procedures" as of the end of the period covered by report, pursuant to Rules 13a-15(b) and 15d-15(b) under the Exchange Act. Based on that evaluation, our Chief Executive Officer

and Chief Financial Officer have concluded that our disclosure controls and procedures, as of the end of the period covered by this report, were effective in timely alerting them to material information relating to the Company required to be included in our periodic SEC filings.

Management's Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f) or 15d-15(f). Management conducted an assessment of the effectiveness, as of December 31, 2011, of our internal control over financial reporting, based on the framework established in *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). Based on our assessment under that framework, management concluded that our internal control over financial reporting was effective as of December 31, 2011.

There has been no change in our internal control over financial reporting during the most recently completed fiscal quarter that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

Nominees for Director

The names of the nominees for director and certain biographical information about them are set forth below:

Name	Age	Director Since	Principal Occupation
Robert F. Allnutt (1)(3)	76	1995	Senior Counselor, APCO Worldwide, Inc.
John F. Benedik (2)(3)	64	2005	Retired Senior Partner, Arthur Andersen LLP
Charles J. Casamento (1)	66	1997	Principal and Executive Director, The Sage Group, Inc.
Carl W. Cotman, Ph.D. (4)	72	1991	Professor of Neurology and Neurobiology and Behavior, University of California at Irvine; Co-Founder and Scientific Director to the Company
Peter F. Drake, Ph.D. (2)(3)	58	2003	Managing General Partner, Mayflower Partners
M. Ross Johnson, Ph.D. (1)(2)(4)	67	2002	President and Chief Executive Officer, Parion Sciences, Inc.
Roger G. Stoll, Ph.D.	69	2002	Executive Chairman of the Company
Mark A. Varney, Ph.D. (4)	45	2007	President and Chief Executive Officer of the Company

(1) Member of Compensation Committee

(2) Member of Audit Committee

(3) Member of Governance and Nominations Committee

(4) Member of Research and Development Committee

Robert F. Allnutt has been a director since December 1995 and served as Chairman of the Board from February 1999 until the appointment of Roger G. Stoll, Ph.D. in August 2002. Since February 1995, Mr. Allnutt has been a senior counselor for APCO Worldwide, Inc., a public affairs and strategic communications company. Mr. Allnutt was Executive Vice President of the Pharmaceutical Manufacturers Association ("PhRMA") from 1985 until 1995 and was Vice President for Governmental Relations of Communications Satellite Corporation from 1984 until 1985. Prior to 1984, Mr. Allnutt held numerous positions in the federal government for over 25 years, including 15 years at the National Aeronautics and Space Administration ("NASA"), where he attained the position of Associate Deputy Administrator, the third highest ranking position in the agency headquarters. Mr. Allnutt has served as Vice Chair of the board of directors of the American Hospice Foundation and as a director of several pharmaceutical-related public and private companies, and of numerous charitable organizations including the National Health Council, the National Council on Aging, the National Medals of Science and Technology Foundation, and the NASA Alumni League. Mr. Allnutt holds a B.S. in Industrial Engineering from the Virginia Polytechnic Institute and J.D. (with distinction) and L.L.M. degrees from George Washington University.

We believe that Mr. Allnutt's qualifications to serve on our Board include valuable business and management insights based on his past experience as a senior staff member of PhRMA, along with his significant experience in both public and private health care organizations and his work within NASA, a federal agency, for 15 years. His broad range of experience and knowledge of the U.S. legal environment provides unique expertise and perspective as a member of our board. Mr. Allnutt currently serves on both our Compensation Committee and our Governance and Nominations Committee.

John F. Benedik was appointed to our Board in December 2005. From 1970 to May 2003, Mr. Benedik worked at Arthur Andersen LLP, where he was admitted to the firm's partnership in 1980. During his tenure with Arthur Andersen LLP, Mr. Benedik held a number of positions, including Division Head for the Consumer Products and Services audit division of the New York area offices from 1994 to 1998, Managing Partner of the New Jersey office from 1999 to 2002 and Practice Director of the New York area offices from 1998 to 2002. From September 2002 to May 2003, Mr. Benedik was a Managing Director of Arthur Andersen LLP. Mr. Benedik served on the board of directors and the audit committee of the board of Aeroflex Incorporated, a global provider of high technology solutions to aerospace, defense, cellular and broadband communications markets, from June 2004 until it was acquired in August 2007 by Veritas Capital in a transaction valued at approximately $1.1 billion. He currently serves as a board member and treasurer of the American Conference on Diversity. Mr. Benedik, a retired Certified Public Accountant in New York and New Jersey, received a B.A. in English from Fordham College and an M.B.A from the Columbia University Graduate School of Business with a concentration in accounting.

We believe that Mr. Benedik's qualifications to serve on our Board include his more than 30-years of experience working as a certified public accountant in the audit division at Arthur Andersen LLP, and his experience as a Managing Director of Arthur Andersen LLP. His experience and insights also help the Company assess risk management and overall financial risks. Mr. Benedik's financial expertise has proven invaluable to the Company, and he currently serves as the Chairman of our Audit Committee and a member of our Governance and Nominations Committee.

Charles J. Casamento has served as a director of the Company since July 1997. Since May 2007, Mr. Casamento has been a Principal and Executive Director of The Sage Group, Inc., a provider of strategic and transactional assistance to healthcare companies in the pharmaceutical, diagnostic, medical device, biotechnology and life science fields. From October 2004 to April 2007, Mr. Casamento was President, Chief Executive Officer and a member of the board of directors of Osteologix, Inc. a publicly held pharmaceutical company that develops products for potential use in treating osteoporosis. From 1999 to August 2004, Mr. Casamento served as Chairman of the board of directors, President and Chief Executive Officer of Questcor Pharmaceuticals, Inc., a publicly held biopharmaceutical company. Mr. Casamento formerly served as RiboGene, Inc.'s Chairman of the board of directors, President and Chief Executive Officer from 1993 through 1999 until it merged with Cypros to form Questcor. He was co-founder, President and Chief Executive Officer of Interneuron Pharmaceuticals, a biopharmaceutical company, from March 1989 until May 1993. Prior to that, Mr. Casamento has held senior management positions at a number of companies, including Senior Vice President and General Manager of Genzyme; Vice President, Business Development and Strategic Planning for the Critical Care Division of American Hospital Supply; and finance, marketing and business development positions with Johnson & Johnson, Hoffman-LaRoche, Inc. and Sandoz Inc. Currently, Mr. Casamento serves on the board of directors and as Chairman of the audit committee of Astex Pharmaceuticals, Inc., a publicly held pharmaceutical company, and he serves on the board of directors and as a member of the compensation committee of International Stem Cell Corporation, a publicly held developer of stem cell technology. Mr. Casamento also serves on the board of directors and is a member of the audit committee and governance committee and as Chairman of the compensation committee of Vivus, Inc., a publicly held pharmaceutical company. He holds a B.S. in Pharmacy from Fordham University and an M.B.A. from Iona College.

We believe that Mr. Casamento's qualifications to serve on our Board include his significant experience in operational and management roles within both large and small pharmaceutical companies, including Osteologix, Inc., Questcor Pharmaceuticals, Inc., Interneuron Pharmaceuticals and Hoffman-

LaRoche, Inc. He also has extensive prior experience working in business development and provides the Company with extremely useful expertise in developing its business base, as highlighted by his position as Executive Director at The Sage Group, a consulting company specializing in the pharmaceutical space. Mr. Casamento also provides broad financial expertise that assists the Company in his current role on our Compensation Committee.

Carl W. Cotman, Ph.D. is a co-founder of the Company. He has been a Scientific Director of and consultant to the Company since October 1987, and has served as a director of the Company from March 1989 to October 1990 and since November 1991. Dr. Cotman is currently a Professor of Neurology and Neurobiology and Behavior at the University of California, Irvine, where he also held various other teaching and research positions since he began his career there in 1968. From 1995 to 2008, he was the Director of the Institute for Brain Aging and Dementia at the University of California, Irvine ("UCI"). He currently is Director of the Alzheimer Research Center at UCI. He has chaired the Scientific Advisory Council of the Alzheimer's Association and is currently a member of numerous professional associations and committees, including the National Institute of Aging Task Force and the Bayer Consumer Care Nutrition Advisory Board. Dr. Cotman also serves on editorial boards of publications such as the Journal of Alzheimer's Disease and Other Dementias. Dr. Cotman received his B.A. in Chemistry from Wooster College, an M.A. in Analytical Chemistry from Wesleyan University, and a Ph.D. in Biochemistry from Indiana University.

We believe that Dr. Cotman's qualifications to serve on our Board include his extensive scientific knowledge and understanding of drug discovery and potential pathways contributing to diseases of the central nervous system. His extensive scientific background includes more than 40 years in various teaching and research positions at the University of California, Irvine, working in the fields of neurobiology, memory and cognition, and the basic mechanisms causing brain dysfunction in aging and the development of Alzheimer's disease. He currently is Chairman of our Research and Development Committee.

Peter F. Drake, Ph.D. has served as a director of the Company since October 2003. Dr. Drake is currently the Managing General Partner of Mayflower Partners, a healthcare investment fund. From 1999 to 2002, he served as a Managing Director in the Equity Research Department of Prudential Securities, Inc., after Prudential acquired Vector Securities International, an investment banking firm co-founded by Dr. Drake in 1988. Vector specialized in raising capital for emerging healthcare companies and acted as an advisor in merger and alliance transactions in the healthcare area. Dr. Drake also co-founded Deerfield Management and Vector Fund Management, both of which are healthcare hedge funds. Dr. Drake joined the investment banking firm of Kidder, Peabody & Co. as a Biotechnology Analyst in 1983, becoming a partner in 1986. He currently serves on the board of directors of Trustmark Insurance Co., a healthcare insurance provider, Sequoia Sciences, a private biotechnology company, and Rodman & Renshaw Capital Group, an investment bank that provides corporate finance, strategic advisory and related services to public and private companies. Dr. Drake received a B.A. degree in Biology from Bowdoin College and attended the Wharton School of Business at the University of Pennsylvania. After receiving his Ph.D. in Biochemistry and Neurobiology from Bryn Mawr College, he spent three years as a Senior Research Associate in the Department of Developmental Biology and Anatomy at Case Western Reserve University.

We believe that Dr. Drake's qualifications to serve on our Board include his extensive experience working as an executive in the investment banking industry and his understanding of corporate finance and capital markets that he gained through his work at Kidder Peabody & Co., Vector Securities International, which he co-founded, and Prudential Securities, Inc. With a Ph.D. in the neurosciences plus his capital markets expertise and experience, Dr. Drake provides a very unique set of qualifications and perspectives to assist with the development of the Company. He currently serves as Chairman of our Governance and Nominations Committees and as a member of our Audit Committee.

M. Ross Johnson, Ph.D. has served as a director of the Company since April 2002. Dr. Johnson is currently Chief Executive Officer, Chief Scientific Officer and President of Parion Sciences, Inc., a privately held pharmaceutical company that he co-founded in 1999. From 2002 to 2008, Dr. Johnson served on the board of directors of ADVENTRX Pharmaceuticals, a biopharmaceutical company focused on the clinical

development of antiviral and anticancer technologies. From 1995 to 1999, Dr. Johnson served as President, Chief Executive Officer and Chief Scientific Officer of Trimeris Inc., a pharmaceutical company that he took public in 1997. From 1987 to 1994, he served as Vice President of Chemistry at Glaxo Inc., where he was part of the original scientific founding team for Glaxo's research entry into the United States. From 1971 to 1987, Dr. Johnson served in key scientific and research management positions with Pfizer Central Research. Dr. Johnson currently holds board positions with Parion Sciences, Inc. and the University of North Carolina Education Advancement Board. He also serves on the Advisory Boards of the College of Chemistry at the University of California at Berkeley, the Department of Chemistry at the University of North Carolina at Chapel Hill, the Biomanufacturing Research Institute and Technology Enterprise (BRITE) Center for Excellence located at North Carolina Central University and the Graduate Education Advisory Board at the University of North Carolina at Chapel Hill. He received his B.S. in Chemistry from the University of California, Berkeley, and a Ph.D. in Organic Chemistry from the University of California, Santa Barbara.

We believe that Dr. Johnson's qualifications to serve on our Board include his extensive contributions to drug discovery and development, which have resulted in over 300 scientific publications, patents and invited presentations, of which include 119 issued patents, and his experience working on several advisory boards, as a chief executive officer and chief scientific officer of other private and public companies. His work experience at very large pharmaceutical companies and his expertise and success in the biotech start-up environment all lend to his considerable ability to help guide our Company. He currently serves as Chairman of the Compensation Committee and as a member of both our Audit Committee and Research and Development Committee.

Roger G. Stoll, Ph.D. has served as a director of the Company since April 2002, and served as Chairman, President and Chief Executive Officer of the Company from August 2002 to August 2008. In August 2008, Dr. Stoll became Executive Chairman of the Company. From 2001 to 2002, Dr. Stoll served as a consultant to the venture capital industry. From 1998 to January 2001, Dr. Stoll served as Executive Vice President at Fresenius Medical Care-North America, with responsibility for the Dialysis Products Division, Spectra Medical Services Division (diagnostic services), and the North American CIS group (computer information systems). From 1991 to 1998, he served as President and Chief Executive Officer of Ohmeda Inc., a pharmaceutical and medical products company with worldwide sales of approximately $1 billion. He also was a member of the board of directors of BOC Group, PLC, now part of The Linde Group. From 1986 to 1991, Dr. Stoll served as a senior executive at Bayer AG, where he rose to the position of Executive Vice President and General Manager of the worldwide diagnostic business group that managed direct sales, manufacturing, research and development and services in over 60 countries. From 1976 to 1986, Dr. Stoll held positions of increasing responsibility at the American Critical Care division of American Hospital Supply Corporation (now Baxter), including President of American Critical Care from 1981 to 1986. He started his industrial career in 1972 at The Upjohn Company, where he conducted Phase I – IV clinical pharmacology studies in humans. Dr. Stoll serves on the board of directors of Chelsea Therapeutics, a publicly held company focusing on the acquisition, development and commercialization of products for the treatment of autoimmune diseases, inflammatory diseases and cancer. Dr. Stoll also serves on the board of directors of Delcath Systems, Inc., a publicly held company engaged in the development and testing of systems for the treatment of liver cancer. Additionally, Dr. Stoll serves on the Alumni Advisory Board for the School of Pharmacy for the University of Connecticut. He is also a director of BIOCOM, a regional trade organization for biotech and pharmaceutical companies. He obtained his B.S. in pharmacy from Ferris State University and a Ph.D. in biopharmaceutics from the University of Connecticut. He also carried out post-doctoral studies in pharmacokinetics at the University of Michigan and has published over 30 scientific papers and contributed chapters in textbooks in the field of drug kinetics.

We believe that Dr. Stoll's qualifications to serve on our Board include his substantial experience working as a consultant to the venture capital industry, his tenure as an executive officer at several large pharmaceutical and medical products companies, and his service on the board of directors of other public biotechnology companies. Dr. Stoll provides the Board with valuable operational, strategic, leadership and management experience, and his varied experience allows him to provide financial and capital raising

expertise to the Board and an important perspective on issues facing biopharmaceutical companies. In addition, his service on the board of directors of other companies and his international business experience provide substantial corporate governance experience.

Mark A. Varney, Ph.D. has served as a director since May 2007. Dr. Varney was appointed Chief Scientific Officer and Chief Operating Officer in January 2006, and appointed President and Chief Executive Officer of the Company in August 2008. Prior to joining the Company Dr. Varney held the senior level position of Vice President and Head of Discovery at Sepracor, Inc., a publicly held pharmaceutical company, from June 2004 to January 2006. From July 2003 to June 2004, Dr. Varney was Vice President of Drug Discovery at Bionomics, Ltd., a publicly held biotechnology company that focuses on drugs to treat cancer and disorders of the central nervous system. From October 1994 to September 1999, Dr. Varney held positions of increasing responsibilities over his five-year tenure at SIBIA Neurosciences, Inc., a biotechnology company including his most recent position as Director of Neuropharmacology. Upon the acquisition of SIBIA by Merck, Inc. in September 1999, he was appointed a Director at Merck's San Diego facility until April 2003. Prior to SIBIA, he held research positions at Servier in France and Merck Sharp & Dohme in the U.K. Dr Varney received his B.Sc. in Biochemistry with honors from Surrey University, U.K. and completed his Ph.D. and postdoctoral training at Oxford University, U.K.

We believe that Dr. Varney's qualifications to serve on our Board include his position as the Company's President and Chief Executive Officer, and his experience working in senior level positions at Sepracor, Inc., Bionomics, Inc. and SIBIA (later as part of Merck, Inc). Dr. Varney provides the Board with both technical and scientific expertise in drug discovery and drug development, research management, governmental regulations and strategic planning expertise that is important to the advancement of our research platform as well as to the overall success of the Company.

Executive Officers

Each executive officer of the Company serves at the discretion of the Board of Directors. The names of the Company's executive officers and certain biographical information about them are set forth below:

Name	Age	Position with Company
Roger G. Stoll, Ph.D.	69	Executive Chairman
Mark A. Varney, Ph.D.	45	President and Chief Executive Officer
Maria S. Messinger	44	Vice President, Chief Financial Officer and Corporate Secretary
James H. Coleman	70	Senior Vice President, Business Development
Steven A. Johnson	60	Vice President, Preclinical Development

The biographical summaries for Drs. Stoll and Varney have been presented earlier. There are no family relationships between any director or executive officer and any other director or executive officer.

Maria S. Messinger was appointed Vice President, Chief Financial Officer and Corporate Secretary of the Company in December 1999. She has served as Controller of the Company since September 1994. From August 1989 to September 1994, Ms. Messinger served in a progression of positions at Ernst & Young LLP, including her most recent position as an Audit Manager. She holds a B.A. from the School of Business Administration and Economics at California State University, Fullerton and maintains an active license as a Certified Public Accountant in California.

James H. Coleman was appointed Senior Vice President, Business Development in May 2000. Prior to joining the Company, Mr. Coleman was President and Senior Partner of Diversified Healthcare Management, Inc. ("DHM"), a biopharmaceutical and biotechnology consulting firm that he founded in 1997. From March 1999 to May 2000, the Company was a client of DHM. During 1996, Mr. Coleman served as Vice President of Commercial Development at CoCensys, Inc., a biotechnology company, where he directed strategic planning and external business development. Mr. Coleman was also employed as an executive at Pharmacia & Upjohn, Inc. for over 25 years, where he acquired extensive management expertise in new product development, global strategic marketing, sales, CNS research and clinical research trial methodologies. Mr. Coleman holds a B.S. in Applied Biology from the University of Rhode Island.

Steven A. Johnson, Ph.D., was appointed Vice President of Preclinical Development in January 2004 and appointed as an executive officer of the Company in January 2007. Dr. Johnson has served as Director, Clinical Research from 2000 to 2003, Director, Biological Research from 1995 to 2000, and Senior Scientist of the Company from 1994 to 1995. From 1989 to 1994, Dr. Johnson was a Research Assistant Professor in the School of Gerontology at the University of Southern California. Prior to that, he conducted research in the field of the molecular biology of development at the California Institute of Technology, and conducted research in the field of molecular biology of Alzheimer's disease at the University of Southern California. A recipient of numerous federal, state and private grants, Dr. Johnson has published more than 50 scientific papers. He received his B.S. in Food Science from Oregon State University and his Ph.D. in Molecular Biology from Purdue University.

Board Committees — Audit Committee

During the fiscal year ended December 31, 2011, the Audit Committee consisted of Mr. Benedik as Chairman of the Committee, Dr. Drake and Mr. Casamento. Effective February 28, 2012, the Audit Committee consisted of Mr. Benedik, as Chairman of the Committee, and Drs. Drake and Johnson. None of Mr. Benedik, Dr. Drake, Dr. Johnson or Mr. Casamento is or has been an officer or employee of the Company and in all other respects meets the qualifications of an "independent" director as that term is used in Rule 10A-3 promulgated under the Securities Exchange Act of 1934, as amended. The Company's Board of Directors has determined that Mr. Benedik, Chairman of the Audit Committee, qualifies as an "audit committee financial expert" under rules promulgated by the Securities and Exchange Commission.

Section 16(a) Beneficial Ownership Reporting Compliance

Section 16(a) of the Securities Exchange Act of 1934 requires our directors and executive officers and persons who own more than ten percent of a registered class of our equity securities to file with the Securities and Exchange Commission (the "SEC") initial reports of ownership and reports of changes in ownership of our common stock and other equity securities. Officers, directors and ten-percent stockholders are required by SEC regulations to furnish us with copies of all Section 16(a) forms they file. To our knowledge, based solely on the review of copies of such reports furnished to us and written representations that no other reports were required, during the fiscal year ended December 31, 2011, all of our officers, directors and ten-percent stockholders complied with all applicable Section 16(a) filing requirements.

Code of Ethics

We have adopted a Code of Business Conduct and Ethics, which covers all of our directors and employees, including our principal executive and financial officers. Any amendment to, or waiver from, any applicable provision (related to elements listed under Item 406(b) of Regulation S-K) of our Code of Business Conduct and Ethics that applies to our directors or executive officers will be posted on our website at www.cortexpharm.com or in a report filed with the SEC on Form 8-K. A copy of our Code of Business Conduct and Ethics is available free of charge upon written request to our Corporate Secretary at 15241 Barranca Parkway, Irvine, California 92618.

Item 11. Executive Compensation

Summary Compensation Table

The table below summarizes the total compensation paid or earned by each of the named executive officers for the fiscal years ended December 31, 2011 and 2010.

Name and Principal Position	Year	Salary ($)	Bonus ($)	All Other Compensation ($)(1)	Total ($)
Roger G. Stoll, Ph.D.	2011	$ 370,000	—	—	$ 370,000
Executive Chairman	2010	$ 338,218	—	—	$ 338,218
Mark A. Varney, Ph.D.	2011	$ 362,000	—	$ 22,400(2)	$ 384,400
President and Chief	2010	$ 330,905	$30,000	$ 49,600(3)	$ 410,505
Executive Officer					
Maria S. Messinger, CPA	2011	$ 243,000	—	—	$ 243,000
Vice President, Chief	2010	$ 222,127	$30,000	—	$ 252,127
Financial Officer and					
Corporate Secretary					
James H. Coleman	2011	$ 250,000	—	$ 9,279(4)	$259,279
Senior Vice President,	2010	$228,526	—	$ 9,279(4)	$ 237,805
Business Development					
Steven A. Johnson, Ph.D.	2011	$ 221,000	—	—	$ 221,000
Vice President of	2010	$ 202,017	30,000	—	$ 232,017
Preclinical Development					

(1) In accordance with Securities and Exchange Commission rules, “Other Annual Compensation” in the form of perquisites and other personal benefits has been omitted where the aggregate amount of such perquisites and other personal benefits was less than $10,000.

(2) Represents payments by the Company to Dr. Varney under the terms of his employment agreement and related to his relocation to southern California, including $14,000 for a mortgage subsidy, subject to a gross-up of $8,400 to cover his additional income tax liabilities. See “Employment and Consulting Agreements” on page 47.

(3) Represents payments by the Company to Dr. Varney under the terms of his employment agreement and related to his relocation to southern California, including $31,000 for a mortgage subsidy, subject to a gross-up of $18,600, to cover his additional income tax liabilities. See “Employment and Consulting Agreements” on page 47.

(4) Represents premiums for life insurance for Mr. Coleman, in lieu of participation in the Company’s medical benefit plans.

Narrative to Summary Compensation Table

In June 2004, the Board of Directors approved a performance-based incentive compensation program for named executive officers that included cash bonus targets of 20% of respective annual base salaries. Actual bonus amounts may differ from the established targets based upon our performance, as well as that of the individual named executive officer, as compared to established goals. There were no performance bonuses awarded to the named executive officers for the year ended December 31, 2011. For the year ended December 31, 2010, performance bonuses of $30,000 were awarded to each of Dr. Mark A. Varney, Ms. Maria S. Messinger and Dr. Steven A. Johnson. These performance bonuses represented less than 20% of the annual base salary for each of the respective named executive officers.

The exercise price for the stock options granted to the named executive officers is no less than the fair market value of the stock on the date of the grant. Options vest at a rate of 33 1/3% per year starting on the anniversary date of the option grant and are contingent upon the officer's continued employment. Accordingly, the option will provide a return to the named executive officer only if he or she remains our employee and the market price of our common stock appreciates over the option term. There were no stock options granted to the named executive officers during the years ended December 31, 2011 and 2010.

To better align the interests of our named executive officers with those of its stockholders, to create ownership focus and to build long-term commitment, we have adopted a common stock ownership policy for our named executive officers. The policy requires named executive officers to acquire and maintain ownership of at least 30,000 shares of our common stock before December 16, 2007, or within three years of commencement of service as a named executive officer, whichever is later. Thereafter, the policy provides for the withholding of salary increases and bonus payments, until the share ownership level has been achieved and maintained by such named executive officer. The Board of Directors has determined that all named executive officers are currently in compliance with the above common stock ownership policy.

See also "Employment and Consulting Agreements" for further discussion of compensation arrangements pursuant to which the amounts listed under the Summary Compensation Table were paid or awarded and the criteria for such payment or award.

Outstanding Equity Awards at Fiscal Year-End

There were no outstanding unvested stock awards as of December 31, 2011. The table below relates solely to outstanding option awards as of December 31, 2011. Except as noted in the footnotes below, the options listed below vest at a rate of 33 1/3% per year commencing on the first anniversary of the date of grant and have a ten-year term.

Name	Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable	Equity Incentive Plan Awards: Number of Securities Underlying Unexercised Unearned Options (#)	Option Exercise Price	Option Expiration Date
Roger G. Stoll, Ph.D.	375,334	187,666	—	$ 0.20	08/22/2019
	200,000	—	—	$ 0.54	01/18/2018
	300,000	—	—	$ 1.30	12/18/2016
	205,017(1)	—	—	$2.95	02/09/2016
	300,000	—	—	$ 2.35	12/01/2015
	300,000	—	—	$ 2.68	12/16/2014
	600,000	—	—	$ 2.76	12/09/2013
	14,545(2)	—	—	$ 4.40	09/02/2013
	1,061(3)	—	—	$ 3.77	08/29/2013
	2,326(3)	—	—	$ 1.72	07/31/2013
	2,222(3)	—	—	$ 1.80	06/30/2013
	2,247(3)	—	—	$ 1.78	05/30/2013
	3,604(3)	—	—	$ 1.11	04/30/2013
	5,556(3)	—	—	$ 0.72	03/31/2013
	5,634(3)	—	—	$ 0.71	02/28/2013
	600,000(4)	—	—	$ 0.78	08/13/2012
	30,000	—	—	$ 2.68	04/09/2012
Mark A. Varney, Ph.D.	392,000	196,000	—	$ 0.20	08/22/2019
	200,000	—	—	$ 0.97	08/13/2018
	200,000	—	—	$ 0.54	01/18/2018
	250,000	—	—	$ 1.30	12/18/2016
	750,000(5)	—	—	$2.95	01/30/2016
Maria S. Messinger, CPA	253,334	126,666	—	$ 0.20	08/22/2019
	100,000	—	—	$ 0.54	01/18/2018
	125,000	—	—	$ 1.30	12/18/2016
	100,000	—	—	$ 2.35	12/01/2015
	100,000	—	—	$ 2.68	12/16/2014
	75,000	—	—	$ 2.76	12/09/2013
	663(3)	—	—	$ 3.77	08/29/2013
	1,453(3)	—	—	$ 1.72	07/31/2013
	1,389(3)	—	—	$ 1.80	06/30/2013
	1,404(3)	—	—	$ 1.78	05/30/2013
	2,252(3)	—	—	$ 1.11	04/30/2013
	3,472(3)	—	—	$ 0.72	03/31/2013
	3,521(3)	—	—	$ 0.71	02/28/2013
	50,000	—	—	$ 0.75	12/16/2012
James H. Coleman	183,334	91,666	—	$ 0.20	08/22/2019
	100,000	—	—	$ 0.54	01/18/2018
	125,000	—	—	$ 1.30	12/18/2016
	100,000	—	—	$ 2.35	12/01/2015
	100,000	—	—	$ 2.68	12/16/2014
	75,000	—	—	$ 2.76	12/09/2013
	840(3)	—	—	$ 3.77	08/29/2013
	1,841(3)	—	—	$ 1.72	07/31/2013
	1,759(3)	—	—	$ 1.80	06/30/2013
	1,779(3)	—	—	$ 1.78	05/30/2013
	2,853(3)	—	—	$ 1.11	04/30/2013
	4,398(3)	—	—	$ 0.72	03/31/2013
	4,460(3)	—	—	$ 0.71	02/28/2013
	50,000(6)	—	—	$ 0.80	02/11/2013
	100,000	—	—	$ 0.75	12/16/2012

Name	Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable	Equity Incentive Plan Awards: Number of Securities Underlying Unexercised Unearned Options (#)	Option Exercise Price	Option Expiration Date
Steven A. Johnson, Ph.D.	174,667	87,333	—	$ 0.20	08/22/2019
	100,000	—	—	$ 0.54	01/18/2018
	150,000	—	—	$ 1.30	12/18/2016
	100,000	—	—	$ 2.35	12/01/2015
	100,000	—	—	$2.68	12/16/2014
	50,000	—	—	$2.76	12/09/2013
	30,000	—	—	$ 0.75	12/16/2012

(1) Dr. Stoll received options in lieu of cash reimbursement of real estate expenses incurred in connection with the relocation of his principal residence to southern California. These options were fully vested on the date of grant and have an exercise price equal to $2.95, representing the closing price of our common stock on the NYSE Amex on the grant date.

(2) Beginning in May 2003, Dr. Stoll voluntarily deferred his entire base salary, as previously reduced. In September 2003, Dr. Stoll agreed to accept stock options to purchase 14,545 shares of our common stock in lieu of this deferred salary. The number of options issued represents $64,000 of his deferred salary divided by the closing sale price of our common stock on the NYSE Amex on the date that Dr. Stoll's salary was re-instated in September 2003. These options were fully vested on the date of grant.

(3) Represents stock options issued in lieu of a portion of base salary. The number of options issued represents the dollar value of base salary not received by the named executive officer divided by the closing sale price of our common stock on the NYSE Amex on the last trading day of the month during which the portion of base salary was not received by the named executive officer. These options were fully vested on the date of grant.

(4) In connection with his employment, Dr. Stoll was granted options to purchase 600,000 shares of common stock at an exercise price of $0.78 per share, representing the closing price of our common stock on the NYSE Amex on the date of grant. Of the 600,000 options granted, 200,000 options vested immediately. Another 200,000 options vested upon securing the amendment to the Company's agreement with Les Laboratoires Servier in October 2002. The remaining 200,000 options vested upon the achievement of pre-determined milestones, all of which were met by the beginning of 2007.

(5) In connection with his employment, Dr. Varney was granted options to purchase 750,000 shares of common stock at an exercise price of $2.95 per share, representing the closing price of our common stock on the date of grant. Of the 750,000 options granted, 100,000 options vested upon his first date of employment on January 30, 2006; 100,000 options vested one-year from his initial date of employment, or January 30, 2007; and 550,000 options vested in equal annual installments over a three-year period from the date of grant.

(6) During 2003, Mr. Coleman agreed to accept stock options in lieu of the cash bonus provided in his employment agreement. These options were fully vested on the date of grant and have an exercise price per share equal to $0.80, representing the closing price of our common stock on the NYSE Amex on the grant date.

Potential Payments Upon Termination or Change-in-Control

The named executive officers have each entered into employment agreements and/or severance agreements governing payments upon termination or in the event we are subject to a change-in-control. See "Employment and Consulting Agreements" on page 47. In March 2009, the named executive officers also entered into retention agreements, the impact of which is included in this section titled "Potential Payments Upon Termination or Change-in-Control." The terms of such agreements are discussed under the heading "Retention Bonus Agreements" on page 48.

Payments Made Upon Termination

Regardless of the manner in which a named executive officer's employment terminates, he or she shall be entitled to receive amounts earned during the term of his or her employment. Such amounts may include stock options awarded under the Company's 1996 Stock Incentive Plan, 2006 Stock Incentive Plan, as amended, and independent of such plans, a portion of which may be subject to accelerated vesting, accrued obligations (including unused vacation pay), and a pro-rated bonus, if applicable. In the event that Dr. Stoll, Dr. Varney, Ms. Messinger or Mr. Coleman's employment is terminated by the Company without cause or by such named executive officer for good reason (as defined in their respective agreements), such person shall be entitled to receive a severance payment of twelve (12) months of his or her base salary (with the exception of Dr. Varney who shall be entitled to receive a severance payment of twelve (12) months of his base salary based upon his average monthly base salary for the twelve (12) months immediately prior to the termination event). Additionally, in such instance Ms. Messinger may be entitled to twelve (12) months continued health and benefits coverage.

Payments Made Upon Termination Due to Death or Disability

In the event of termination of employment due to the death or disability of a named executive officer, in addition to the payment of accrued obligations, the named executive officer will receive benefits under the Company's disability plan or payments under the Company's life insurance plan, as appropriate. Additionally, with respect to Dr. Stoll, Dr. Varney and Mr. Coleman, in the event of disability such named executive officers will receive a salary benefit equal to the difference between any insurance proceeds received and twelve (12) months salary.

Payments Made Upon a Change-In-Control Without Termination

If the Company is subject to a change-in-control, irrespective of whether a termination of employment occurs, all stock options held by the named executive officer will automatically vest and become exercisable (with the exception of Mr. Coleman who will receive accelerated vesting for one additional year and only if he is terminated). Additionally, pursuant to the terms of the March 2009 retention agreements, under certain circumstances each named executive officer will be entitled to receive a lump sum cash bonus equal to six (6) months of the executive's base salary.

Payments Made Upon Termination in Connection With a Change-In-Control

If a named executive officer's employment is terminated in connection with or, for Dr. Johnson, within six (6) months following, a change of control without cause or for good reason (other than Dr. Johnson whose agreement does not include termination for good reason), then the named executive officers shall be entitled to the benefits listed under the headings "Payments Made Upon Termination"and "Payments Made Upon a Change-In-Control Without Termination," included above. Additionally, in connection with such event, Dr. Johnson will receive a severance payment of twelve (12) months of his base salary and twelve (12) months continued health and benefits coverage. Further, pursuant to the terms of the March 2009 retention agreements, under certain circumstances each named executive officer will be entitled to receive a lump sum cash bonus equal to six (6) months of the executive's base salary.

Employment and Consulting Agreements

Roger G. Stoll, Ph.D. has served as a director of the Company since April 2002 and became Chairman, President and Chief Executive Officer of the Company in August 2002. In August 2008, Dr. Stoll became the Executive Chairman of the Company and Dr. Varney became the President and Chief Executive Officer. Dr. Stoll's employment agreement originally included a three-year term, was subsequently amended to include another three-year term expiring in August 2008, and subsequently amended again for successive one-year terms expiring in August 2012. As of December 31, 2011, his employment called for a base salary of $370,000 per year. Dr. Stoll's base salary is subject to annual review by the Compensation Committee of the Board of Directors. Under the terms of his employment agreement, in the event of termination of his employment, under certain circumstances Dr. Stoll is entitled to compensation equal to twelve (12) months of his then current salary. In addition, in the event of his termination of employment, in certain circumstances, any vested options granted to Dr. Stoll remain exercisable for the remainder of the original option term and any unvested options granted to Dr. Stoll in connection with his employment, as detailed above, may be subject to accelerated vesting and remain exercisable for the remainder of the original option term. In the event of termination due to disability, Dr. Stoll will be entitled to receive a salary benefit equal to the difference between any insurance proceeds received and twelve (12) months salary. Further, upon a change-in-control of the Company, all unvested options then held by Dr. Stoll shall be subject to accelerated vesting.

Mark A. Varney, Ph.D. joined the Company as Chief Operating Officer and Chief Scientific Officer in January 2006 and was named President and Chief Executive Officer in August 2008. His employment agreement provides for a three-year term through August 2011 and was subsequently amended to include another three-year term through August 2014. Dr. Varney's employment agreement calls for a base salary of $362,000 per year as of December 31, 2011 and an annual bonus, at the discretion of the Board of Directors of the Company. Pursuant to the terms of his employment agreement, over the five years ended in July 2011 the Company provided Dr. Varney with a mortgage subsidy in the form of a monthly payment, whereby the Company paid 6% of the principal amount of a mortgage (which principal amount was capped at $1,200,000) on his primary residence during the first year, which amount declined by 1% each year thereafter, and which amount was grossed-up by a factor of 1.6 to cover Dr. Varney's additional income tax liabilities. In addition to the foregoing, Dr. Varney received a $25,000 hiring bonus, $15,000 to cover miscellaneous relocation expenses, temporary housing and reimbursement of real estate closing fees, sales commissions and moving costs. In the event of termination of Dr. Varney's employment without cause or for good reason, under certain circumstances he is entitled to receive compensation of twelve (12) months of his base salary based upon the average monthly base salary for the twelve (12) months immediately prior to the termination event and his vested options will remain exercisable for the balance of their original terms. In the event of termination due to disability, Dr. Varney will be entitled to receive a salary benefit equal to the difference between any insurance proceeds received and twelve (12) months salary. In addition, in the event of a change-in-control of the Company, any unvested options then held by Dr. Varney shall be subject to accelerated vesting.

Maria S. Messinger joined the Company as Controller in September 1994 and was named as Vice President, Chief Financial Officer and Corporate Secretary in December 1999. Under the terms of her severance agreement, in the event of termination of her employment, under certain circumstances Ms. Messinger is entitled to receive compensation of twelve (12) months of her then current annual base salary, which as of December 31, 2011 was $243,000. Ms. Messinger's severance agreement also includes a pro-rated bonus (if applicable) and continued employee benefits for a period of twelve (12) months thereafter. Additionally, in the event of a change-in-control of the Company, any unvested options then held by Ms. Messinger shall be subject to accelerated vesting.

James H. Coleman joined the Company as Senior Vice President, Business Development in May 2000. His employment agreement, as amended to date, provides a base salary of $250,000 per year as of December 31, 2011. Mr. Coleman's employment agreement also provides an annual bonus between 0 and 50% of his annual base salary, at the discretion of the Chief Executive Officer and subject to approval by

the Compensation Committee of the Board of Directors of the Company. In the event of termination of his employment, Mr. Coleman is entitled, under certain circumstances, to receive compensation of twelve (12) months of his then current salary and any unvested options then held by Mr. Coleman shall be subject to accelerated vesting for an additional one year period. Additionally, in the event of termination due to disability, Mr. Coleman will be entitled to receive a salary benefit equal to the difference between any insurance proceeds received and twelve (12) months salary.

Steven A. Johnson, Ph.D. joined the Company as a Senior Scientist in June 1994 and was named as Vice President, Preclinical Development in February 2007. Under the terms of his severance agreement, in the event of termination of Dr. Johnson's employment without cause in connection with or within six (6) months following a change-in-control of the Company, under certain circumstances he is entitled to receive compensation of twelve (12) months of his then current salary, which as of December 31, 2011 was $221,000 per year. Dr. Johnson's severance agreement also provides continued employee benefits for a period of twelve (12) months thereafter. In addition, in the event of a change-in-control of the Company, any unvested options then held by Dr. Johnson shall be subject to accelerated vesting.

Retention Bonus Agreements

In March 2009, the Company's executive officers and other key personnel entered into retention bonus agreements to foster the continuous employment of such individuals. Under such agreements, each executive officer will be entitled to receive a lump sum cash bonus equal to six (6) months of the executive's base salary in the event of a change in control, as defined in the Company's 2006 Stock Incentive Plan, occurs and the executive remains continuously employed with the Company, the successor to the Company or, if applicable, the ultimate parent of any such successor (collectively referred to as the "Surviving Entity"), or any subsidiary thereof, through the date occurring three (3) months post-change of control, or such shorter period as deemed necessary by the Surviving Entity (the "Payment Date"), to allow for an orderly transition of personnel and information and to allow for an appropriate integration process, as needed. The amount of the bonus for executive officers, based on base salaries as of December 31, 2011, would be as follows: Dr. Stoll - $185,000, Dr. Varney - $181,000, Ms. Messinger - $121,500, Mr. Coleman - $125,000 and Dr. Johnson - $110,500. The retention bonus agreements provide that the bonus shall be payable by the Surviving Entity on or as soon as practicable following the Payment Date, but no later than 15 days thereafter, and shall be determined without regard to any reduction of base salary applicable to Company executives subsequent to March 13, 2009 and prior to a change in control. In the event that the executive officer's employment is terminated by the Surviving Entity or a subsidiary thereof after a change in control and prior to the Payment Date, in certain circumstances where the termination is without cause or for good reason, the bonus shall be payable by the Surviving Entity as soon as practicable following the date of termination of the executive officer's employment (but no later than sixty (60) days thereafter), subject to the executive officer executing and not revoking a general release of all claims against the Surviving Entity in a form acceptable to the Surviving Entity within sixty (60) days following such termination of employment.

Director Compensation

The Compensation Committee uses a combination of cash and stock-based incentive compensation to attract and retain qualified candidates to serve on the Board of Directors. In setting director compensation, the Compensation Committee considers the significant amount of time that directors expend in fulfilling their duties to the Company as well as the skill-level required by the Company of members of the Board of Directors. Similar to executive officers, directors are subject to a minimum share ownership requirement. The policy requires directors to acquire and maintain ownership of at least 30,000 shares of the Company's Common Stock before December 16, 2007, or within three years of commencement of service as a director, whichever is later. Thereafter, the policy provides for the withholding of fees until the ownership level has been achieved by such director. The Board of Directors has determined that all directors serving the Company have met the minimum share ownership requirement.

During 2011, each non-employee director was entitled to receive $4,000 at each in-person Board of Directors meeting attended and $2,000 for each related Board of Directors meeting attended by telephone. Also, the Chairman of the Compensation Committee, the Governance and Nominations Committee and the Research and Development Committee is entitled to receive $2,000 for each committee meeting attended and other members of the respective committees are entitled to receive $1,000 for each committee meeting attended. The Chairman of the Audit Committee is entitled to receive $3,000 for each committee meeting attended and the remaining members of the Audit Committee are entitled to receive $1,000 for each committee meeting attended.

Each non-employee director is automatically granted options to purchase 30,000 shares of common stock upon commencement of service as a director. Additionally, each non-employee director is granted options to purchase 30,000 shares of common stock on the date of the first meeting of the Board of Directors for the relative calendar year. These nonqualified options described above each have an exercise price equal to 100% of the fair market value of the common stock on the date of grant, have a ten-year term and vest in equal increments of 33 1/3% on each anniversary date of the dates of grant, and are otherwise subject to the terms and provisions of the 2006 Stock Incentive Plan.

The above cash compensation and nonqualified option grant provisions do not apply to non-employee directors who serve on the Board of Directors to oversee an investment in the Company. Compensation for such non-employee directors, if appropriate, is determined separately. As of December 31, 2011, none of the Company's directors served on the Board of Directors in such capacity.

Director Summary Compensation Table

The table below summarizes the total compensation paid or earned by each of the non-employee directors for the fiscal year ended December 31, 2011. Directors who are also employees of the Company did not receive any additional compensation for services as a director.

Name	Fees Earned or Paid in Cash ($)	Option Awards ($)(1)	All Other Compensation ($)(2)	Total ($)
Robert F. Allnutt	$ 16,000	$3,338(3)	—	$19,338
John F. Benedik, CPA	$ 24,000	$3,338(4)	—	$27,338
Charles J. Casamento	$ 18,000	$3,338(5)	—	$21,338
Carl W. Cotman, Ph.D.	$ 14,000	$3,338(6)	—	$17,338
Peter F. Drake, Ph.D.	$ 14,000	$3,338(7)	—	$17,338
M. Ross Johnson, Ph.D.	$ 18,000	$3,338(8)	—	$21,338

(1) Amounts represent the aggregate grant date estimated fair value of the option awards using the Black-Scholes option pricing model. Assumptions used in the calculation of these amounts are included in Note 1 to the Company's audited financial statements for the fiscal year ended December 31, 2011, included in this Annual Report on Form 10-K.

(2) In accordance with Securities and Exchange Commission rules, "All Other Compensation" in the form of perquisites and other personal benefits has been omitted where the aggregate amount of such perquisites and other personal benefits was less than $10,000. The amounts reflected in this column represent fees paid to such directors in their capacities as consultants to the Company.

(3) Mr. Allnutt had an aggregate of 320,000 option awards outstanding as of December 31, 2011.

(4) Mr. Benedik had an aggregate of 205,000 option awards outstanding as of December 31, 2011.

(5) Mr. Casamento had an aggregate of 335,000 option awards outstanding as of December 31, 2011.

(6) Dr. Cotman had an aggregate of 285,000 option awards outstanding as of December 31, 2011.

(7) Dr. Drake had an aggregate of 280,000 option awards outstanding as of December 31, 2011.

(8) Dr. Johnson had an aggregate of 350,000 option awards outstanding as of December 31, 2011.

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

Beneficial Ownership of Common Stock

The following table sets forth, to the knowledge of the Company, certain information regarding the beneficial ownership of the Company's Common Stock as of March 15, 2012, by (i) each person known by the Company to be the beneficial owner of more than 5% of the outstanding Common Stock, (ii) each of the Company's directors, (iii) each of the named executive officers in the Summary Compensation Table and (iv) all of the Company's executive officers and directors as a group. Except as indicated in the footnotes to this table, the Company believes that the persons named in this table have sole voting and investment power with respect to the shares of Common Stock indicated.

Directors, Officers and 5% Stockholders (1)	Shares Beneficially Owned (2)	Percent of Common Stock Beneficially Owned (%) (2)
Samyang Optics Co. Ltd.	22,714,499(3)	24.9
Samyang Value Partners Co., Ltd.	8,456,833(4)	9.7
Robert F. Allnutt	335,500(5)	*
John F. Benedik	185,000(6)	*
Charles J. Casamento	300,000(7)	*
James H. Coleman	1,058,851(8)	1.2
Carl W. Cotman, Ph.D.	309,500(9)	*
Peter F. Drake, Ph.D.	280,000(10)	*
M. Ross Johnson, Ph.D.	330,000(11)	*
Steven A. Johnson, Ph.D.	735,429(12)	*
Maria S. Messinger, CPA	866,552(13)	1.0
Roger G. Stoll, Ph.D.	3,047,546(14)	3.4
Mark A. Varney, Ph.D.	1,882,000(15)	2.1
All executive officers and directors as a group (11 persons)	9,270,378(16)	9.8

* Less than one percent

(1) Except as otherwise indicated, the address of such beneficial owner is at the Company's principal executive offices, 15231 Barranca Parkway, Irvine, California 92618.

(2) Applicable percentage of ownership at March 15, 2012 is based upon 85,623,663 shares of Common Stock outstanding. Beneficial ownership is determined in accordance with the rules of the Securities and Exchange Commission and includes voting and investment power with respect to shares shown as beneficially owned. Shares of Common Stock subject to options or warrants currently exercisable or exercisable within 60 days of March 15, 2012 are deemed outstanding for computing the shares and percentage ownership of the person holding such options or warrants, but are not deemed outstanding for computing the percentage ownership of any other person or entity.

(3) Based on a Schedule 13D jointly filed by Samyang Optics Co. Ltd. ("Samyang") and its wholly-owned subsidiary Samyang Value Partners Co., Ltd. ("Samyang Value") on October 31, 2011, the amount reflected in the table above consists of (i) 4,081,633 shares that may be purchased upon exercise of warrants issued to Samyang and 1,691,367 shares that may be purchased upon exercise of warrants issued to Samyang Value, in each case within 60 days of March 15, 2012, and (ii) 10,176,033 shares of common stock and 6,765,466 shares of common stock held by Samyang and Samyang Value, respectively. The principal business office for Samyang Optics Co. Ltd. is located at 654-4 Bongham-dong, Masan-hoiwon-Gu, Changwon-si Kyungsangnam-do, SOUTH KOREA. Dong Hoon Kim, whose business address is the same as Samyang, serves as the director of Samyang and, as such, has voting control and investment discretion over the shares owned by Samyang. The Schedule 13D indicates that Samyang shares voting

and dispositive power over the shares owned by Samyang Value.

(4) Based on a Schedule 13 D jointly filed by Samyang and Samyang Value on October 31, 2011, the amount reflected in the table above consists of 6,765,466 shares of common stock and a warrant to purchase up to 1,691,367 shares of common stock exercisable within 60 days of March 15, 2012. The principal business office for Samyang Value Partners Co., Ltd. is 158-12 Seoyoung B/D 12F, Samsung-Dong, Gangnam-Gu, SEOUL KOREA. Hyoung Rae Cho, whose business address is the same as Samyang Value, serves as the director of Samyang Value and, as such, has voting control and investment discretion over the shares owned by Samyang Value.

(5) Includes 270,000 shares that may be purchased upon exercise of options within 60 days of March 15, 2012.

(6) Includes 155,000 shares that may be purchased upon exercise of options within 60 days of March 15, 2012.

(7) Includes 285,000 shares that may be purchased upon exercise of options within 60 days of March 15, 2012. Excludes 17,653 shares held by Mr. Casamento in a trust over which he does not exercise control.

(8) Includes 851,264 shares that may be purchased upon exercise of options within 60 days of March 15, 2012. Beneficial ownership of these shares is shared and held by the James Henry and Nancy Irene Coleman III Revocable Trust.

(9) Includes 235,000 shares that may be purchased upon exercise of options within 60 days of March 15, 2012.

(10) Includes 230,000 shares that may be purchased upon exercise of options within 60 days of March 15, 2012.

(11) Includes 300,000 shares that may be purchased upon exercise of options within 60 days of March 15, 2012.

(12) Includes 704,667 shares that may be purchased upon exercise of options within 60 days of March 15, 2012.

(13) Includes 817,488 shares that may be purchased upon exercise of options within 60 days of March 15, 2012.

(14) Includes 2,947,546 shares that may be purchased upon exercise of options within 60 days of March 15, 2012.

(15) Includes 1,792,000 shares that may be purchased upon exercise of options within 60 days of March 15, 2012.

(16) Includes 8,587,965 shares that may be purchased upon exercise of options within 60 days of March 15, 2012.

The Company is not aware of any arrangements that may at a subsequent date result in a change of control of the Company.

EQUITY COMPENSATION PLAN INFORMATION

The following table sets forth information regarding outstanding options, warrants and rights and shares reserved for future issuance under our existing equity compensation plans as of December 31, 2011. Our stockholders approved the Company's 1996 Stock Incentive Plan, as amended and restated, and the Company's 2006 Stock Incentive Plan, as amended. Following the expiration of the 1996 Stock Incentive Plan in October 2006, all subsequently granted stock options were and will be issued from the 2006 Stock Incentive Plan.

Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted-average exercise price of outstanding options, warrants and rights (b)	Number of securities remaining available for issuance under equity compensation plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by security holders	10,550,856	$ 1.34	4,250,136
Equity compensation plans not approved by security holders	250,000[1]	$ 2.95	—
Total	10,800,856	$ 1.38	4,250,136

(1) In January 2006, as an inducement to the employment of our Chief Operating Officer and Chief Scientific Officer, Mark A. Varney, Ph.D., we issued 250,000 options outside of the 1996 Stock Incentive Plan and the 2006 Stock Incentive Plan. The options granted to Dr. Varney have a ten-year term and vested in the following installments: 83,334 on January 30, 2007, 83,333 on January 30, 2008 and 83,333 on January 30, 2009.

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

Director Independence

A majority of members of the Board of Directors are "independent director[s]", as that term is defined under Section 803 of the NYSE Amex Company Guide. The Board of Directors has affirmatively determined that the following six directors are independent: Robert F. Allnutt, John F. Benedik, Charles J. Casamento, Carl W. Cotman, Peter F. Drake and M. Ross Johnson.

- ***Audit Committee***. Each member of the Company's standing Audit Committee is an "independent director" as defined under Section 803 of the NYSE Amex Company Guide, and is "independent" as that term is used in Rule 10A-3 promulgated under the Securities Exchange Act of 1934, as amended.
- ***Compensation Committee***. Each member of the Company's standing Compensation Committee is an "independent director" as defined under Section 803 of the NYSE Amex Company Guide.

- ***Governance and Nominations Committee*** . Each member of the Company's Governance and Nominations Committee is an "independent director" as defined under Section 803 of the NYSE Amex Company Guide.

Transactions with Related Persons

There were no disclosable transactions with related persons under Item 404 of Regulation S-K during the fiscal year ended December 31, 2011 or December 31, 2010, or currently proposed.

Item 14. Principal Accounting Fees and Services

Audit Fees

The aggregate fees of Haskell & White LLP, the Company's independent registered public accounting firm, for audit services totaled approximately $83,000 and $88,000 for the fiscal years ended December 31, 2011 and 2010, respectively, including fees associated with the reviews of the Company's quarterly reports on Form 10-Q and the annual audit.

Audit-Related Fees

The aggregate fees of Haskell & White LLP for audit-related fees totaled approximately $8,000 and $9,000, respectively for the fiscal years ended December 31, 2011 and 2010, respectively, and included services related to the Company's registration statement filed on Forms S-1.

Tax Fees

Fees of Haskell & White LLP for tax services, including tax compliance, tax advice and tax planning totaled approximately $14,000 and $13,000 for the fiscal years ended December 31, 2011 and 2010, respectively.

All Other Fees

There were no other fees for services provided by Haskell & White LLP for the fiscal years ended December 31, 2011 or 2010.

All of the services described under headings "Audit Fees," "Audit-Related Fees," "Tax Fees" and "All Other Fees" above were pre-approved by the Audit Committee.

Policy on Audit Committee Pre-Approval of Audit Services and Permissible Non-Audit Services of Independent Registered Public Accountants

The Audit Committee's policy is to pre-approve all audit and permissible non-audit services performed by the independent registered public accountants. These services may include audit services, audit-related services, tax services and other services. For audit services, the independent registered public accountant provides the Audit Committee with an audit plan including proposed fees in advance of the annual audit. The Audit Committee approves the plan and fees for the audit.

For non-audit services, the Company's senior management will submit from time to time to the Audit Committee for approval non-audit services that it recommends the Audit Committee engage the independent registered public accountants to provide during the fiscal year. The Company's senior management and the independent registered public accountants will each confirm to the Audit Committee that each non-audit service is permissible under all applicable legal requirements. A budget, estimating non-audit service spending for the fiscal year, will be provided to the Audit Committee along with the request. The Audit Committee must approve both permissible non-audit services and the budget for such services.

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a) List of documents filed as part of this report:

(1) Financial Statements

Reference is made to the Index to Financial Statements on page F-1, where these documents are listed.

(2) Financial Statement Schedules

The financial statement schedules have been omitted because the required information is not applicable, or not present in amounts sufficient to require submission of the schedules, or because the information is included in the financial statements or notes thereto.

(3) Exhibits

See (b) below.

(b) Exhibits

Exhibit Number	Description
3.1	Second Restated Certificate of Incorporation dated May 19, 2010, incorporated by reference to the same numbered Exhibit to the Company's Report on Form 8-K filed May 24, 2010.
3.2	By-Laws of the Company, as adopted March 4, 1987, and amended on October 8, 1996, incorporated by reference to the same numbered Exhibit to the Company's Annual Report on Form 10-KSB filed October 15, 1996.
3.5	Certificate of Amendment of By-Laws of the Company, incorporated by reference to the same numbered Exhibit to the Company's Report on Form 8-K filed November 15, 2007.
4.3	Placement Agency Agreement, dated August 24, 2007, by and between Cortex Pharmaceuticals, Inc. and JMP Securities LLC and Rodman and Renshaw, LLC, Form of Subscription Agreement and Form of Common Stock Purchase Warrant issued by Cortex Pharmaceuticals, Inc., incorporated by reference to Exhibits 1.1, 1.2 and 4.1, respectively, to the Company's Report on Form 8-K filed August 27, 2007.
4.4	Placement Agency Agreement, dated April 13, 2009, by and between the Company and Rodman & Renshaw, LLC, Form of Securities Purchase Agreement and Form of Common Stock Purchase Warrant issued by the Company, incorporated by reference to Exhibits 1.1, 1.2 and 4.1, respectively, to the Company's Current Report on Form 8-K filed April 17, 2009.
10.19	License Agreement dated March 27, 1991 between the Company and the Regents of the University of California, incorporated by reference to the same numbered Exhibit to the Company's Amendment on Form 8 filed November 27, 1991 to the Company's Annual Report on Form 10-KSB filed September 30, 1991. (Portions of this Exhibit are omitted and were filed separately with the Secretary of the Commission pursuant to the Company's application requesting confidential treatment under Rule 24b-2 under the Securities Exchange Act of 1934).
10.31	License Agreement dated June 25, 1993, as amended May 28, 2003, between the Company and the Regents of the University of California, incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-Q filed February 12, 2004. (Portions of this Exhibit are omitted and were filed separately with the Secretary of the Commission pursuant to the Company's application requesting confidential treatment under Rule 24b-2 of the Securities Exchange Act of 1934).
10.44	Lease Agreement, dated January 31, 1994, for the Company's facilities in Irvine, California, incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-QSB filed May 16, 1994.
10.60	Amended and Restated 1996 Stock Incentive Plan, incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-Q as filed on November 14, 2002.*
10.65	Amendment No. 1 to the Lease Agreement for the Company's facilities in Irvine, California, dated February 1, 1999, incorporated by reference to the same numbered Exhibit to the Company's Annual Report on Form 10-KSB filed September 28, 1999.
10.67	Collaborative Research, Joint Clinical Research and Licensing Agreements with Les Laboratoires Servier dated October 13, 2000, incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-QSB filed November 14, 2000. (Portions of this Exhibit were omitted and filed separately with the Secretary of the Commission pursuant to the Company's application requesting confidential treatment under Rule 24b-2 of the Securities Act of 1934).
10.69	Employment agreement dated May 17, 2000, between the Company and James H. Coleman, incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-QSB filed February 12, 2001.*
10.70	Severance agreement dated October 26, 2000, between the Company and Maria S. Messinger, incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-QSB filed February 12, 2001.*
10.73	Amendment dated October 3, 2002 to the Collaboration Research Agreement with Les Laboratoires Servier dated October 13, 2000, incorporated by reference to the same numbered Exhibit to the Company's Annual Report on Form 10-K filed October 15, 2002.
10.74	Employment agreement dated October 29, 2002 between the Company and Roger G. Stoll, Ph.D., incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-Q as filed on November 14, 2002.*

Exhibit Number	Description
10.76	First Amendment dated April 8, 2003 to the employment agreement dated October 29, 2002 between the Company and Roger G. Stoll, Ph.D., incorporated by reference to the same numbered Exhibit to the Company's Annual Report on Form 10-K filed September 19, 2003.*
10.77	Amendment dated December 16, 2003 to the Collaboration Research Agreement with Les Laboratoires Servier dated October 13, 2000, incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-Q filed February 12, 2004. (Portions of this Exhibit are omitted and were filed separately with the Secretary of the Commission pursuant to the Company's application requesting confidential treatment under Rule 24b-2 of the Securities Exchange Act of 1934).
10.79	Amendment No. 2 to the Lease Agreement for the Company's facilities in Irvine, California, dated March 9, 2004, incorporated by reference to the same numbered Exhibit to the Company's Annual Report on Form 10-K filed on September 27, 2004.
10.80	Form of Incentive/Non-qualified Stock Option Agreement under the Company's Amended and Restated 1996 Stock Incentive Plan, incorporated by reference to the same numbered Exhibit to the Company's Annual Report on Form 10-K filed on September 27, 2004.*
10.81	Form of Restricted Stock Award Agreement under the Company's Amended and Restated 1996 Stock Incentive Plan, incorporated by reference to the same numbered Exhibit to the Company's Annual Report on Form 10-K filed on September 27, 2004.*
10.82	Amendment dated January 1, 2004 to the employment agreement dated May 17, 2000 between the Company and James H. Coleman, incorporated by reference to the same numbered Exhibit to the Company's Annual Report on Form 10-K filed on September 27, 2004.*
10.86	Second Amendment dated November 10, 2004 to the employment agreement dated October 29, 2002 between the Company and Roger G. Stoll, Ph.D., incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-Q filed on November 15, 2004.*
10.88	Form of Notice of Grant of Stock Options and Stock Option Agreement under the Company's Amended and Restated 1996 Stock Incentive Plan, incorporated by reference to the same numbered Exhibit to the Company's Transition Report on Form 10-K filed on March 21, 2005.*
10.89	Stock Ownership Policy for the Company's Directors and Executive Officers as adopted by the Board of Directors on December 16, 2004, incorporated by reference to the same numbered Exhibit to the Company's Transition Report on Form 10-K filed on March 21, 2005.*
10.90	Third Amendment dated August 13, 2005 to the employment agreement dated October 29, 2002 between the Company and Roger G. Stoll, Ph.D, incorporated by reference to Exhibit 10.1 to the Company's Report on Form 8-K filed August 17, 2005.*
10.92	Employment letter of agreement dated January 9, 2006 between the Company and Mark Varney, Ph.D., incorporated by reference to the same numbered Exhibit to the Company's Annual Report on Form 10-K filed March 16, 2006.*
10.93	Non-qualified Stock Option Agreement dated January 30, 2006 between the Company and Mark Varney, Ph.D., incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-Q filed May 9, 2006.*
10.94	Cortex Pharmaceuticals, Inc. 2006 Stock Incentive Plan, incorporated by reference to the same numbered Exhibit to the Company's Report on Form 8-K filed May 11, 2006.*
10.96	Form of Notice of Grant of Stock Options and Stock Option Agreement under the Company's 2006 Stock Incentive Plan, incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-Q filed August 8, 2006.*
10.97	Form of Incentive/Non-qualified Stock Option Agreement under the Company's 2006 Stock Incentive Plan, incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-Q filed August 8, 2006.*
10.98	Amendment No. 3, dated April 1, 2006, to the Lease Agreement for the Company's facilities in Irvine, California, incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-Q filed August 8, 2006.
10.100	Negative Equity Agreement dated February 1, 2007 between the Company and Mark A. Varney, Ph.D., incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-Q filed May 10, 2007.*
10.101	Amendment No. 1 to the Company's 2006 Stock Incentive Plan, incorporated by reference to the same numbered Exhibit to the Company's Current Report on Form 8-K filed May 15, 2007.*

Exhibit Number	Description
10.102	Amendment to the Exclusive License Agreement between the Company and The Regents of the University of California, dated as of June 1, 2007, incorporated by reference to the same numbered Exhibit to the Company's Current Report on Form 8-K filed June 7, 2007.
10.105	Patent License Agreement between the Company and the University of Alberta, dated as of May 9, 2007, incorporated by reference to the same numbered Exhibit to the Company's Annual Report on Form 10-K filed March 17, 2008. (Portions of this Exhibit are omitted and were filed separately with the Secretary of the Commission pursuant to the Company's application requesting confidential treatment under Rule 24b-2 under the Securities Exchange Act of 1934).
10.107	Severance Agreement dated May 2, 2008, between the Company and Steven A. Johnson, Ph.D., incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-Q filed May 8, 2008.*
10.108	Amendment No. 4, dated June 6, 2008, to the Lease Agreement for the Company's facilities in Irvine, California, incorporated by reference to the same numbered Exhibit to the Company's Report on Form 8-K filed June 10, 2008.
10.109	Fourth Amendment, dated July 11, 2008, to the employment agreement dated October 29, 2002 between the Company and Roger G. Stoll, Ph.D., incorporated by reference to the same numbered Exhibit to the Company's Report on Form 8-K filed July 17, 2008.*
10.110	Amendment No. 2 to Employment Agreement, dated as of December 22, 2008, between the Company and James H. Coleman, incorporated by reference to the same numbered Exhibit to the Company's Report on Form 8-K filed December 23, 2008.*
10.111	Amendment No. 1 to Severance Agreement, dated as of December 22, 2008, between the Company and Maria S. Messinger, incorporated by reference to the same numbered Exhibit to the Company's Report on Form 8-K filed December 23, 2008.*
10.112	Employment Agreement, dated as of December 19, 2008, between the Company and Mark A. Varney, Ph.D., incorporated by reference to the same numbered Exhibit to the Company's Report on Form 8-K filed December 31, 2008.*
10.113	Form of Retention Bonus Agreement, dated March 13, 2009, between the Company and each of its executive officers, incorporated by reference to the same numbered Exhibit to the Company's Current Report on Form 8-K filed March 19, 2009.*
10.114	Securities Purchase Agreement, dated July 29, 2009, by and between the Company and the investor, including a form of Registration Rights Agreement attached as Exhibit B thereto and a form of Common Stock Purchase Warrant attached as Exhibit C thereto, incorporated by reference to the same numbered Exhibit to the Company's Current Report on Form 8-K filed July 30, 2009.
10.115	Amendment No. 2 to the Company's 2006 Stock Incentive Plan, effective as of June 5, 2009, incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-Q filed August 14, 2009.*
10.116	Asset Purchase Agreement, dated March 25, 2010, by and between the Company and Biovail Laboratories International SRL, incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-Q filed May 17, 2010. (Portions of this exhibit are omitted and were filed separately with the Secretary of the Commission pursuant to the Company's application requesting confidential treatment under Rule 24b-2 of the Securities Exchange Act of 1934).
10.117	License Agreement, dated March 25, 2010, by and between the Company and Biovail Laboratories International SRL, incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-Q filed May 17, 2010. (Portions of this exhibit are omitted and were filed separately with the Secretary of the Commission pursuant to the Company's application requesting confidential treatment under Rule 24b-2 of the Securities Exchange Act of 1934).
10.118	Amendment No. 3 to the Company's 2006 Stock Incentive Plan, incorporated by reference to the same numbered Exhibit to the Company's Report on Form 8-K filed May 24, 2010.*
10.119	Sixth Amendment dated August 13, 2010 to the employment agreement dated October 29, 2002 between the Company and Roger G. Stoll, Ph.D., incorporated by reference to the same numbered Exhibit to the Company's Report on Form 8-K filed August 18, 2010.*
10.120	Amendment to the License Agreement between the Company and The Regents of the University of California, dated as of August 24, 2010, incorporated by reference to the same numbered Exhibit to the Company's Report on Form 8-K filed August 30, 2010.

Exhibit Number	Description
10.121	Fifth Amendment to the License Agreement between the Company and The Regents of the University of California, dated as of March 15, 2011, incorporated by reference to the same numbered Exhibit to the Company's Current Report on Form 8-K filed March 21, 2011.
10.122	Asset Purchase Agreement, dated March 15, 2011, by and between the Company and Biovail Laboratories SRL, incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-Q filed May 23, 2011. (Portions of this exhibit are omitted and were filed separately with the Secretary of the Commission pursuant to the Company's application requesting confidential treatment under Rule 24b-2 of the Securities Exchange Act of 1934).
10.123	First Amendment dated August 2, 2011 to the Employment Agreement dated December 19, 2008 between the Company and Mark A. Varney, Ph.D., incorporated by reference to the same numbered Exhibit to the Company's Current Report on Form 8-K filed August 8, 2011.*
10.124	Seventh Amendment dated August 2, 2011 to the Employment Agreement dated October 29, 2002 between the Company and Roger G. Stoll, Ph.D., incorporated by reference to the same numbered Exhibit to the Company's Current Report on Form 8-K filed August 8, 2011.*
10.125	Patent Assignment and Option and Amended and Restated Agreement dated June 10, 2011 between the Company and Les Laboratoires Servier, incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-Q filed August 18, 2011. (Portions of this exhibit are omitted and were filed separately with the Secretary of the Commission pursuant to the Company's application requesting confidential treatment under Rule 24b-2 of the Securities Exchange Act of 1934).
10.126	Securities Purchase Agreement, dated January 15, 2010, by and between the Company and Samyang Optics Co., Ltd., including a form of Promissory Note attached as Exhibit A thereto and a form of Common Stock Purchase Warrant attached as Exhibit B thereto, incorporated by reference to Exhibit 10.116 to the Company's Current Report on Form 8-K filed January 21, 2010.
10.127	Securities Purchase Agreement, dated October 20, 2011, by and between the Company and Samyang Value Partners Co., Ltd., including a form of Common Stock Purchase Warrant attached as Exhibit C thereto.
21	Subsidiaries of the Registrant.
23.1	Consent of Haskell & White LLP, Independent Registered Public Accounting Firm.
24	Power of Attorney (included on signature page).
31.1	Certification of Chief Executive Officer Pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934.
31.2	Certification of Chief Financial Officer Pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934.
32	Certification of Chief Executive Officer and Chief Financial Officer Pursuant to Rule 13a-14(b)/15d-14(b) of the Securities Exchange Act of 1934 and 18 U.S.C. Section 1350.
101.INS	XBRL Instance Document.†
101.SCH	XBRL Taxonomy Extension Schema Document.†
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document.†
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document.†
101.LAB	XBRL Taxonomy Extension Label Linkbase Document.†
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document.†

* Each of these Exhibits constitutes a management contract, compensatory plan, or arrangement.

† The XBRL information is being furnished and not filed for purposes of section 18 of the Securities Exchange Act of 1934, as amended, and is not incorporated by reference into any registration statement under the Securities Act of 1933, as amended.

Index to Financial Statements

Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors
Cortex Pharmaceuticals, Inc.

We have audited the accompanying balance sheets of Cortex Pharmaceuticals, Inc. (the "Company") as of December 31, 2011 and 2010, and the related statements of operations, stockholders' equity (deficit) and comprehensive income (loss), and cash flows for each of the years in the two-year period ended December 31, 2011. Cortex Pharmaceuticals, Inc.'s management is responsible for these financial statements. Our responsibility is to express an opinion on these financial statements based on our audits.

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

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Cortex 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 two-year period ended December 31, 2011 in conformity with accounting principles generally accepted in the United States of America.

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 of the financial statements, the Company does not currently possess sufficient working capital to fund its operations through the next fiscal year. This raises substantial doubt about the Company's ability to continue as a going concern. Management's plans in regard to this matter are also described in Note 1. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

/s/ HASKELL & WHITE LLP

Irvine, California
March 30, 2012

Cortex Pharmaceuticals, Inc.

BALANCE SHEETS

	December 31, 2011	December 31, 2010
Assets		
Current assets:		
Cash and cash equivalents	$ 1,610,945	$ 1,037,549
Marketable securities	—	1,992,952
Restricted cash	48,309	155,736
Other current assets	85,630	89,807
Total current assets	1,744,884	3,276,044
Furniture, equipment and leasehold improvements, net	66,882	249,831
Other	8,889	41,373
	$ 1,820,655	$ 3,567,248
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	$ 472,756	$ 393,781
Accrued wages, salaries and related expenses	235,399	275,353
Unearned revenue	48,309	155,736
Advance for MCI project	323,779	319,761
Deferred rent	64,502	11,288
Total current liabilities	1,144,745	1,155,919
Other non-current liability	—	8,063
Total liabilities	1,144,745	1,163,982
Commitments and Contingencies (Note 8)		
Stockholders' equity:		
Series B convertible preferred stock, $0.001 par value; $25,001 liquidation preference; shares authorized: 37,500; shares issued and outstanding: 37,500; common shares issuable upon conversion: 3,679	21,703	21,703
Common stock, $0.001 par value; shares authorized: 205,000,000; shares issued and outstanding: 85,623,663 (December 31, 2011) and 78,858,197 (December 31, 2010)	85,624	78,858
Additional paid-in capital	121,337,670	120,816,472
Unrealized gain, available for sale marketable securities	—	473
Accumulated deficit	(120,769,087)	(118,514,240)
Total stockholders' equity	675,910	2,403,266
	$ 1,820,655	$ 3,567,248

See accompanying notes.

Cortex Pharmaceuticals, Inc.

STATEMENTS OF OPERATIONS

	Year ended December 31, 2011	Year ended December 31, 2010
Revenues:		
Sale of AMPAKINE® assets (Note 6)	$ —	$ 10,000,000
License revenue	3,000,000	—
Grant revenue	114,605	473,592
Total revenues	3,114,605	10,473,592
Operating expenses:		
Research and development	2,187,695	3,738,630
General and administrative	3,188,704	4,552,935
Total operating expenses	5,376,399	8,291,565
(Loss) income from operations	(2,261,794)	2,182,027
Interest income (expense), net	6,947	(553,302)
Net (loss) income	$ (2,254,847)	$ 1,628,725
Net (loss) income per share (Note 1), Basic and diluted	$ (0.03)	$ 0.02
Shares used in calculating per share amounts (Note 1):		
Basic	79,988,864	73,678,335
Diluted	79,988,864	73,688,896

See accompanying notes.

Cortex Pharmaceuticals, Inc.

STATEMENTS OF STOCKHOLDERS' EQUITY (DEFICIT) AND COMPREHENSIVE INCOME (LOSS)

	Series B convertible preferred stock	Common stock	Additional paid-in capital	Accumulated other comprehensive income (loss)	Accumulated deficit	Total
Balance, December 31, 2009	$21,703	$ 68,413	$118,525,140	$ —	$(120,142,965)	$(1,527,709)
Beneficial conversion feature on note payable issued in January 2010	—	—	223,880	—	—	223,880
Issuance of 10,445,579 shares of common stock upon conversion of note payable and accrued interest	—	10,445	1,525,055	—	—	1,535,500
Estimated value of warrants issued upon conversion of note payable	—	—	233,766	—	—	233,766
Issuance and vesting of stock options and warrants for consultants and other service providers	—	—	8,757	—	—	8,757
Non-cash stock-based employee compensation charges	—	—	299,874	—	—	299,874
Comprehensive income						
Net income	—	—	—	—	1,628,725	1,628,725
Unrealized gain on available for sale U.S. Government and other marketable securities	—	—	—	473	—	473
Comprehensive income	—	—	—	473	1,628,725	1,629,198
Balance, December 31, 2010	$21,703	$78,858	$ 120,816,472	$ 473	$ (118,514,240)	$ 2,403,266
Issuance of 6,765,466 unregistered shares of common stock in October 2011 private placement	—	6,766	471,036	—	—	477,802
Issuance and vesting of stock options for consultants and other service providers	—	—	1,161	—	—	1,161
Non-cash stock-based employee compensation charges	—	—	49,001	—	—	49,001
Comprehensive loss						
Net loss	—	—	—	—	(2,254,847)	(2,254,847)
Realized gain (loss) on available for sale U.S. Government and other marketable securities	—	—	—	(473)	—	(473)
Comprehensive loss	—	—	—	(473)	(2,254,847)	(2,255,320)
Balance, December 31, 2011	$21,703	$85,624	$ 121,337,670	$ —	$ (120,769,087)	$ 675,910

See accompanying notes.

Cortex Pharmaceuticals, Inc.

STATEMENTS OF CASH FLOWS

	Year ended December 31, 2011	Year ended December 31, 2010
Cash flows from operating activities:		
Net (loss) income	$ (2,254,847)	$ 1,628,725
Adjustments to reconcile net (loss) income to net cash (used in) provided by operating activities:		
Depreciation and amortization	106,971	112,475
Adjustment to fair value of fixed assets	43,643	—
Stock option compensation expense	50,162	308,631
Amortization of beneficial conversion feature	—	223,880
Amortization of capitalized offering costs	—	57,698
Warrant issued upon conversion of promissory note	—	233,767
Changes in operating assets/liabilities:		
Restricted cash	107,427	(155,736)
Accrued interest on marketable securities	2,519	19,907
Other current assets	4,177	(70,229)
Other non-current assets	32,484	5,294
Accounts payable and accrued expenses	84,172	(1,226,232)
Unearned revenue	(107,427)	155,736
Accrued interest on convertible promissory note	—	35,500
Changes in other assets and other liabilities	(5,092)	9,288
Net cash (used in) provided by operating activities	(1,935,811)	1,338,704
Cash flows from investing activities:		
Purchase of marketable securities	—	(2,622,386)
Proceeds from maturities of marketable securities	1,990,000	610,000
Purchase of fixed assets	—	(50,889)
Proceeds from sales of fixed assets	41,405	63,435
Net cash provided by (used in) investing activities	2,031,405	(1,999,840)
Cash flows from financing activities:		
Proceeds from issuance of common stock in October 2011 private placement	500,000	—
Costs related to issuance of common stock in October 2011 private placement	(22,198)	—
Proceeds from issuance of convertible promissory note in January 2010 private placement	—	1,500,000
Costs related to issuance of convertible promissory note in January 2010 private placement	—	(27,781)
Net cash provided by financing activities	477,802	1,472,219
Increase in cash and cash equivalents	573,396	811,083
Cash and cash equivalents, beginning of period	1,037,549	226,466
Cash and cash equivalents, end of period	$ 1,610,945	$ 1,037,549
Supplemental disclosure of non-cash financing activities:		
Issuance of common stock upon conversion of promissory note	$ —	$ 1,535,500

See accompanying notes.

Cortex Pharmaceuticals, Inc.

NOTES TO FINANCIAL STATEMENTS

Note 1 — Business and Summary of Significant Accounting Policies

Business — Cortex Pharmaceuticals, Inc. (the "Company") was formed to engage in the discovery, development and commercialization of innovative pharmaceuticals for the treatment of neurological and psychiatric disorders. Since its formation in 1987, the Company has been engaged in research and early clinical development activities.

From inception through December 31, 2011, the Company has generated only modest operating revenues. For the year ended December 31, 2011, revenues included amounts related to the restated agreement with Les Laboratoires Servier ("Servier"), as further described in Note 5. Revenues for the year ended December 31, 2010 primarily resulted from the March 2010 transaction with Biovail Laboratories International SRL ("Biovail"), as described more fully in Note 6.

Going Concern — The Company will require substantial additional funds to advance its research and development programs and to continue its operations, particularly if it decides to independently conduct later-stage clinical testing and apply for regulatory approval of any of its proposed products, and if it independently undertakes marketing and promotion of its products. Additionally, the Company will require additional funds in the event that it decides to pursue strategic acquisitions or licenses for other products or businesses. Based on its current operating plan, including research and development costs, the Company estimates that its existing cash resources will be sufficient to meet its requirements into the second quarter of 2012. This raises substantial doubt about the Company's ability to continue as a going concern, which will be dependent on its ability to obtain additional financing and to generate sufficient cash flows to meet its obligations on a timely basis.

The Company is exploring its strategic and financial alternatives for its AMPAKINE program and although it is presently engaged in discussions with a number of candidate companies, there can be no assurance that an agreement will arise from these discussions in a timely manner, or at all.

The Company may need to raise additional capital through the sale of debt or equity and may consider a merger transaction with another pharmaceutical company. The Company believes that without additional investment capital, it will not have sufficient cash to fund its activities in the near future, and will not be able to continue operating. As such, the Company's continuation as a going concern is dependent upon its ability to raise additional financing.

If the Company is unable to obtain additional financing to fund operations beyond mid-second quarter of 2012, it will need to eliminate some or all of its activities, merge with another company, sell some or all of its assets to another company, or cease operations entirely. There can be no assurance that the Company will be able to obtain additional financing on favorable terms or at all, or that the Company will be able to merge with another Company or sell any or all of its assets.

Cash Equivalents — The Company considers all highly liquid short-term investments with maturities of less than three months when acquired to be cash equivalents.

Marketable Securities — Marketable securities are carried at fair value, with unrealized gains and losses, net of any tax, reported as a separate component of stockholders' equity. The Company utilizes observable inputs based on quoted prices in active markets for identical assets to record the fair value of its marketable securities. Authoritative guidance that establishes a framework for fair value for generally accepted accounting principles in the United States deems observable inputs for identical assets as Level 1 inputs, the most reliable in the hierarchy of inputs for determining fair value measurements.

The amortized cost of debt securities is adjusted for amortization of premiums and accretion of discounts to maturity. Such amortization is included in interest income. Realized gains and losses and declines in value judged to be other-than-temporary on short-term investments are included in interest income, net. The cost of

securities sold is based on the specific identification method. Interest and dividends on securities classified as available-for-sale are included in interest income.

Concentrations of Credit Risk — Financial instruments that potentially subject the Company to concentrations of credit risk consist primarily of cash, cash equivalents and short-term investments. The Company limits its exposure to credit loss by investing its cash with high credit quality financial institutions.

Furniture, Equipment and Leasehold Improvements — Furniture, equipment and leasehold improvements are recorded at cost and depreciated on a straight-line basis over the lesser of their estimated useful lives, ranging from five to ten years, or the life of the lease, as appropriate.

Long-Lived Assets — The Company reviews its long-lived assets for impairment whenever events or changes in circumstances indicate that the total amount of an asset may not be recoverable. An impairment loss is recognized when estimated future cash flows expected to result from the use of the asset and the eventual disposition are less than the asset's carrying amount. The Company did not recognize any significant impairment losses during any of the periods presented.

Revenue Recognition — The Company recognizes revenue when all four of the following criteria are met: (i) pervasive evidence that an arrangement exists; (ii) delivery of the products and/or services has occurred; (iii) the fees earned can be readily determined; and (iv) collectibility of the fees is reasonably assured.

Amounts received for upfront technology license fees under multiple-element arrangements are deferred and recognized over the period of committed services or performance, if such arrangements require the Company's on-going services or performance.

The Company records research grant revenues as the expenses related to the grant projects are incurred. Amounts received under research grants are nonrefundable, regardless of the success of the underlying research, to the extent that such amounts are expended in accordance with the approved grant project.

Employee Stock Options and Stock-Based Compensation — All share-based payments to employees, including grants of employee stock options, are recognized in the financial statements based on their fair values. For options granted during the years ended December 31, 2011 and 2010, the fair value of each option award was estimated using the Black-Scholes option pricing model and the following assumptions:

	Year ended December 31,	
	2011	2010
Weighted average risk-free interest rate	2.8%	3.2%
Dividend yield	0%	0%
Volatility factor of the expected market price of the Company's common stock	107%	108%
Weighted average life	7.0 years	6.9 years

Expected volatility is based on the historical volatility of the Company's stock. The Company also uses historical data to estimate the expected term of options granted and employee termination rates. The risk-free rate for periods within the expected useful life of the options is based on the U.S. Treasury yield curve in effect at the time of grant.

The estimated weighted average fair value of options granted during the years ended December 31, 2011 and 2010 was $0.11 and $0.14, respectively.

As of December 31, 2011, there was approximately $43,000 of total unrecognized compensation cost related to non-vested share-based employee compensation arrangements. That non-cash cost is expected to be recognized over a weighted-average period of one year.

Stock options and warrants issued to non-employees as compensation for services to be provided to the Company are accounted for based upon the fair value of the services provided or the estimated fair value of the option or warrant, whichever can be more clearly determined. The Company recognizes this expense over the period in which the services are provided. The Company did not record significant charges for non-cash stock-based compensation for options issued to consultants and other non-employees for any of the periods presented.

The Company issues new shares to satisfy stock option and warrant exercises. There were no options exercised during the years ended December 31, 2011 and 2010.

Research and Development Costs — All costs related to research and development activities are treated as expenses in the period incurred.

Comprehensive Income (Loss) — All components of comprehensive income or loss, including net income or loss, are reported in the financial statements in the period in which they are recognized. Comprehensive income or loss is defined as the change in equity during a period from transactions and other events and circumstances from non-owner sources. Net income (loss) and other comprehensive income (loss), including unrealized gains and losses on investments, are reported net of any related tax effect to arrive at comprehensive income (loss).

In June 2011, the Financial Accounting Standards Board issued Accounting Standards Update No. 2011-05, “Presentation of Comprehensive Income” (ASU 2011-05). ASU 2011-05 requires comprehensive income to be reported in either a single statement or in two consecutive statements reporting net income and other comprehensive income. ASU 2011-05 eliminates the option to report other comprehensive income and its components in the statement of changes in stockholder’s equity.

The Company has yet to determine which of the two approved methods it will use to report its other comprehensive income. The Company will be required to adopt ASU 2011-05 retroactively effective January 1, 2012 and such adoption is not expected to have a material impact on the Company’s financial position or its results of operations.

Net Income (Loss) per Share — Net income (loss) per share is computed based on the weighted average number of common shares outstanding.

As of December 31, 2011, the Company has reserved approximately 36.6 million shares of common stock for issuance upon exercise of outstanding stock options and stock purchase warrants, as well as for conversion of the Company’s Series B preferred stock, as further described in Note 4. For the year ended December 31, 2011, the effect of the potentially issuable shares of common stock was not included in the calculation of diluted loss per share given that the effect would be anti-dilutive.

For the year ended December 31, 2010, the following table reconciles the numerators and denominators of the basic and diluted income per share computations.

	For the Year Ended December 31, 2010		
	Net income (Numerator)	Shares (Denominator)	Per-Share Amount
Basic Earnings per Share:			
Net income applicable to common stock	$1,628,725	73,678,335	$ 0.02
Effect of Dilutive Securities:			
Options to purchase common stock	—	10,561	
Diluted Earnings per Share:			
Net income applicable to common stock			
+ assumed conversions	$1,628,725	73,688,896	$ 0.02

Options to purchase up to 11,861,640 shares of the Company's common stock at a weighted average price of $1.42 per share were outstanding as of December 31, 2010, but were excluded from the calculation of diluted income per share given that the options' exercise price exceeded the average market price of the Company's common stock. Similarly, warrants to purchase up to 24,126,952 shares of the Company's common stock at a weighted average price of $0.74 per share were outstanding as of December 31, 2010 and were excluded from the calculation of diluted income per share given that the exercise price of the warrants exceeded the average market price of the Company's common stock.

The effect of the shares issued upon conversion of the convertible promissory note (see Note 3) were included and weighted for the period the shares were outstanding after the conversion. The weighted effect of shares assumed issued for the period the convertible securities were outstanding prior to conversion, and the additions to the numerator for charges related to the promissory note, including the beneficial conversion feature within the promissory note and the allocated fair value of warrants issued upon the note's conversion, were not included in the calculation of diluted earnings per share given that the effect would have been anti-dilutive.

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. These estimates and assumptions affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual amounts may differ from those estimates.

Reclassifications — Certain reclassifications have been made to the Cash Flow Statement for the year ended December 31, 2010 to conform with the presentation for the year ended December 31, 2011.

Note 2 — Detail of Selected Balance Sheet Accounts

The Company did not hold any marketable securities as of December 31, 2011. The following is a summary of marketable securities as of December 31, 2010:

	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Corporate obligations	$ 518,208	$ —	$ (141)	$ 518,067
Mortgage backed government securities	475,081	24	—	475,105
U.S. government obligations	999,206	574	—	999,780
Total marketable securities	$1,992,495	$ 598	$ (141)	$1,992,952

The amortized cost and estimated fair value of available-for-sale marketable securities as of December 31, 2010, by contractual maturity, are as follows:

	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Maturities				
Within one year	1,992,495	598	(141)	1,992,952
Total marketable securities	$1,992,495	$ 598	$ (141)	$1,992,952

Gross realized gains and losses on sales of marketable securities were not significant in the years ended December 31, 2011 and 2010. The Company manages risk on its investment portfolio by matching scheduled investment maturities with its cash requirements.

Furniture, equipment and leasehold improvements consist of the following:

	December 31,	
	2011	2010
Laboratory equipment	$ 59,822	$1,516,859
Leasehold improvements	766,905	773,871
Furniture and equipment	170,447	183,549
Computers and software	173,675	340,083
	1,170,849	2,814,362
Accumulated depreciation	(1,103,967)	(2,564,531)
	$ 66,882	$ 249,831

Note 3 — Transactions with Samyang

In January 2010, the Company completed a private placement of a convertible promissory note in the principal amount of $1,500,000 with a single accredited institutional investor, Samyang Optics Co., Ltd. (“Samyang”) of Korea. The promissory note accrued simple interest at the rate of 6% per annum and was convertible into unregistered shares of the Company’s common stock at Samyang’s election at any time on or after April 15, 2010 and on or before the January 15, 2011 maturity date (the “maturity date”).

In June 2010, the promissory note and the related accrued interest were converted by Samyang into a total of 10,445,579 unregistered shares of the Company’s common stock at an effective conversion price of $0.147 per share. The number of common shares issuable upon conversion of the promissory note was based upon the greater of: (i) $0.134 per share or (ii) an amount representing a 15% discount to the five-day volume weighted average closing price of the Company’s common stock immediately prior to the conversion date.

In connection with the conversion of the promissory note, the Company was obligated to issue to Samyang two-year warrants to purchase up to 4,081,633 additional unregistered shares of the Company’s common stock at an exercise price of $0.206 per share. The warrants include a call right, in favor of the Company, to the extent the weighted average closing price of the Company’s common stock exceeds $0.309 per share for each of ten consecutive trading days, subject to certain circumstances.

In recording the proceeds from the private placement, the Company evaluated the conversion feature within the promissory note and determined that such embedded feature is indexed to the Company’s common stock and should not be separated from the promissory note and accounted for as a derivative instrument. The Company also evaluated the exercise feature for the potentially issuable warrants and deemed the instruments indexed to the Company’s common stock and subject to equity classification within the Company’s balance sheet.

The value of the promissory note was estimated as of the issuance date based upon the fair value of the underlying common stock issuable upon its conversion. At the same time, the fair value of the warrants potentially issuable to the investor was estimated using the Black-Scholes option pricing model. The Company then used the relative fair value method to allocate the proceeds to the promissory note and the potentially issuable warrants.

Based upon the allocated proceeds, the Company calculated an effective conversion price for the promissory note and then measured the intrinsic value of the beneficial conversion right embedded within the promissory note. The beneficial conversion right is based on the difference between the fair value of the Company’s common stock and the effective conversion price of the promissory note on the closing date of the offering.

The value of the beneficial conversion right of approximately $224,000 was originally amortized as interest expense over the 15-month period until potential redemption of the promissory note, or April 15, 2011, along with capitalized offering costs incurred in connection with the transaction. Upon conversion of the promissory note in June 2010, the unamortized balances for the beneficial conversion right and the capitalized offering costs were immediately amortized as interest expense.

Upon issuance of the warrants resulting from conversion of the promissory note, the previously estimated relative fair value allocated to the warrants was recorded as interest expense, with an offsetting entry to additional paid-in capital.

In October 2011, the Company completed a private placement of $500,000 in securities with Samyang Value Partners Co., Ltd., a wholly owned subsidiary of Samyang. The transaction included the issuance of 6,765,466 unregistered shares of the Company's common stock and two-year warrants to purchase up to an additional 1,691,367 unregistered shares of its common stock. The warrants have an exercise price of $0.1035 per share and a call right, in favor of the Company, to the extent the weighted average closing price of the Company's common stock exceeds $0.1553 per share for each of ten consecutive trading days, subject to certain circumstances.

In connection with the investment, the Company and Samyang entered into a non-binding memorandum of understanding ("MOU") regarding a potential license agreement for rights to the AMPAKINE CX1739 for the treatment of neurodegenerative diseases in South Korea. The MOU also provided Samyang with rights of negotiation to expand its territory into other South East Asian countries, excluding Japan, Taiwan and China, and to include rights to the high impact AMPAKINE CX1846 for the potential treatment of neurodegenerative diseases. The related license agreement was subsequently completed in January 2012.

Note 4 — Stockholders' Equity

Preferred Stock

The Company has authorized a total of 5,000,000 shares of preferred stock, par value $0.001 per share, of which, as of December 31, 2011, 1,250,000 shares have been designated as 9% Cumulative Convertible Preferred Stock (non-voting, "9% Preferred"); 37,500 shares have been designated as Series B Convertible Preferred Stock (non-voting, "Series B Preferred"); 205,000 have been designated as Series A Junior Participating Preferred Stock (non-voting, "Series A Junior Participating") and 3,507,500 shares were undesignated and may be issued with such rights and powers as the Board of Directors may designate. No shares of the 9% Preferred or the Series A Junior Participating were outstanding during the years ended December 31, 2011 and 2010.

Series B Preferred outstanding as of December 31, 2011 and 2010 consisted of 37,500 shares issued in a May 1991 private placement. Each share of Series B Preferred is convertible into approximately 0.09812 shares of common stock at an effective conversion price of $6.795 per share of common stock, subject to adjustment under certain circumstances. As of December 31, 2011, the remaining shares of Series B Preferred outstanding are convertible into 3,679 shares of common stock. The Company may redeem the Series B Preferred at a price of $0.6667 per share, an amount equal to its liquidation preference, at any time upon 30 days' prior notice.

Common Stock and Common Stock Purchase Warrants

Under the terms of the Company's completed registered direct offering with several institutional investors in January 2007, the Company sold an aggregate of 5,021,427 shares of its common stock and warrants to purchase 3,263,927 shares of its common stock. The warrants have an exercise price of $1.66 per share and were exercisable on or before January 21, 2012. During the year ended December 31, 2007, the Company received approximately $443,000 from the exercise of related warrants. No other related warrants were exercised and the remaining 2,996,927 warrants expired unexercised in January 2012.

Under the terms of the Company's completed registered direct offering with several institutional investors in August 2007, the Company sold an aggregate of 7,075,000 shares of its common stock and warrants to purchase 2,830,000 shares of its common stock to the investors. The investors' warrants have an exercise price

of $2.64 per share and are exercisable on or before August 28, 2012. In addition, the Company issued warrants to purchase up to an aggregate of 176,875 shares of its common stock to the placement agents in the offering. The placement agents' warrants have an exercise price of $3.96 per share and are exercisable on or before August 28, 2012. No related warrants were exercised during the years ended December 31, 2010 and 2011. If the investor and placement agent warrants are fully exercised, of which there can be no assurance, these warrants would provide approximately $8,172,000 of additional capital.

In connection with the registered direct offering of the Company's 0% Series E Convertible Preferred Stock in April 2009, the Company issued warrants to purchase an aggregate of 6,941,176 shares of its common stock to a single institutional investor. The warrants were issued with an exercise price of $0.3401 per share and are exercisable on or before October 17, 2012. In February 2010, the exercise price of these warrants was reduced to $0.2721 in exchange for the investor's consent and waiver with respect to the Company's completed financing transaction with Samyang Optics Co., Ltd. in January 2010, as explained more fully in Note 3. The warrants also are subject to a call provision in favor of the Company to the extent that the volume weighted average price of the Company's common stock exceeds $0.6802 for any 20 consecutive trading days. If the warrants are fully exercised, of which there can be no assurance, these warrants would provide approximately $1,889,000 of additional capital. The Company also issued warrants to purchase up to an additional aggregate of 433,824 shares of the Company's common stock to the placement agent for the transaction. These warrants have an exercise price of $0.26 per share and are subject to the same term of exercisability as the warrants issued to the investor. The warrants issued to the placement agent are subject to a call provision in favor of the Company to the extent that the volume weighted average price of the Company's common stock exceeds $0.52 for any 20 consecutive trading days. If the warrants are fully exercised, of which there can be no assurance, these warrants would provide approximately $113,000 of additional capital. No related warrants were exercised during the years ended December 31, 2010 and 2011.

In connection with the private placement of the Company's Series F Convertible Preferred Stock in July 2009, the Company issued warrants to purchase an aggregate of 6,060,470 shares of its common stock to a single institutional investor. The warrants have an exercise price of $0.2699 per share and are exercisable on or before January 31, 2013. If the warrants are fully exercised, of which there can be no assurance, these warrants would provide approximately $1,636,000 of additional capital. The Company also issued warrants to purchase up to an additional aggregate of 606,047 shares of the Company's common stock to the placement agent for the transaction. These warrants have an exercise price of $0.3656 per share and are subject to the same term of exercisability as the warrants issued to the investor. The warrants issued to the investor and the placement agent are subject to a call provision in favor of the Company to the extent that the volume weighted average price of the Company's common stock exceeds $0.5398 for any 20 consecutive trading days. If the warrants issued to the placement agent are fully exercised, of which there can be no assurance, these warrants would provide approximately $222,000 of additional capital. No related warrants were exercised during the years ended December 31, 2010 and 2011.

Warrants issued in connection with the Company's prior financing transactions detailed above permit the Company to settle such warrants in unregistered shares by means of a cashless exercise. Using a cashless exercise, the holder of the warrants would receive a number of unregistered shares representing the gain on exercise of such warrants, divided by the volume weighted average price of the Company's common stock on the trading day immediately preceding such exercise. Given the Company's ability to settle the warrants with unregistered shares, the Company has not accounted for these warrants as derivative liabilities.

In connection with the conversion of the promissory note issued to Samyang (see Note 3), in June 2010 the Company issued to Samyang two-year warrants to purchase up to 4,081,633 unregistered shares of the Company's common stock at an exercise price of $0.206 per share. The warrants include a call right, in favor of the Company, to the extent the weighted average closing price of the Company's common stock exceeds $0.309 per share for each of ten consecutive trading days, subject to certain circumstances.

In connection with the private placement of common stock issued to Samyang (see Note 3), in October 2011 the Company issued to Samyang two-year warrants to purchase up to 1,691,367 unregistered shares of the Company's common stock at an exercise price of $0.1035 per share. The warrants include a call right, in favor of the Company, to the extent the weighted average closing price of the Company's common stock exceeds $0.1553 per share for each of ten consecutive trading days, subject to certain circumstances.

Warrant transactions by the Company for the years ended December 31, 2010 and 2011 are summarized below:

	Number of underlying shares	Weighted average exercise price per share
Outstanding as of December 31, 2009	20,195,319	$ 0.89
Issued	4,081,633	0.21
Exercised	—	—
Expired	(150,000)	2.78
Outstanding as of December 31, 2010	24,126,952	$ 0.74
Issued	1,691,367	0.10
Exercised	—	—
Expired	—	—
Outstanding as of December 31, 2011	25,818,319	$ 0.70

Information regarding warrants outstanding at December 31, 2011 is as follows:

Range of exercise prices	Number outstanding and exercisable at December 31, 2011	Weighted average remaining contractual life	Weighted average exercise price
$0.10 - $0.37	19,814,517	0.9 years	$ 0.25
$1.66	2,996,927	0.1 years	1.66
$2.64 - $3.96	3,006,875	0.7 years	2.72
	25,818,319		

Stock Option and Stock Purchase Plan

The Company's 1996 Stock Incentive Plan (the "1996 Plan"), which terminated pursuant to its terms on October 25, 2006, provided for the granting of options and rights to purchase up to an aggregate of 10,213,474 shares of the Company's authorized but unissued common stock to qualified employees, officers, directors, consultants and other service providers. Options previously granted under the 1996 Plan generally vest over a three-year period, although some options granted to officers included more accelerated vesting. Options previously granted under the 1996 Plan generally expire ten years from the date of grant, but some options granted to consultants expire five years from the date of grant.

On March 30, 2006, the Company's Board of Directors approved the 2006 Stock Incentive Plan (the "2006 Plan"), which subsequently was approved by the Company's stockholders on May 10, 2006. Since the approval of the 2006 Plan, no further options have been or will be granted under the 1996 Plan. The 2006 Plan provides for the granting of options and rights to purchase up to an aggregate of 9,863,799 shares of the Company's authorized but unissued common stock (subject to adjustment under certain circumstances, such as

stock splits, recapitalizations and reorganization) to qualified employees, officers, directors, consultants and other service providers.

Under the 2006 Plan, the Company may issue a variety of equity vehicles to provide flexibility in implementing equity awards, including incentive stock options, nonqualified stock options, restricted stock grants, stock appreciation rights, stock payment awards, restricted stock units and dividend equivalents. The exercise price of stock options offered under the 2006 Plan must be at least 100% of the fair market value of the common stock on the date of grant. If the person to whom an incentive stock option is granted is a 10% stockholder of the Company on the date of grant, the exercise price per share shall not be less than 110% of the fair market value on the date of grant. Vesting and expiration provisions for options granted under the 2006 Plan are similar to those under the 1996 Plan.

Subject to any restrictions under federal or securities laws, the Chief Executive Officer may award stock options to new non executive-officer employees and consultants, with a market value at the time of hire equivalent to up to 100% of the employee's annual salary or the consultant's anticipated annual consulting fees. The Chief Executive Officer shall have the discretion to increase or decrease such awards based on market and recruiting factors subject to a limit per person in each case of options to purchase 50,000 shares. Additionally, on an annual basis, the Chief Executive Officer may grant continuing employees and consultants, based upon performance and objectives, a stock option for that number of shares up to 40% of the employee's annual salary or the consultant's annual fees, but not to exceed 50,000 shares per person per year. Any option grant exceeding 50,000 shares per person per year requires approval by the Compensation Committee of the Board of Directors. These options shall be granted with an exercise price equal to the fair market value of the Company's common stock on the date of issuance, have a ten-year term, vest annually over a three-year period from the dates of grant and have other terms consistent with the 2006 Plan.

Each non-employee director (other than those who serve on the Board of Directors to oversee an investment in the Company) is automatically granted options to purchase 30,000 shares of common stock upon commencement of service as a director and, each non-employee director is automatically granted additional options to purchase 30,000 shares of common stock on the date of the first meeting of the Board of Directors for the relative calendar year. Stock option issuances to non-employee directors who serve on the Board of Directors to oversee an investment in the Company are determined separately. No non-employee directors currently serve in that capacity. The nonqualified options to non-employee directors have an exercise price equal to 100% of the fair market value of the common stock on the date of grant, have a ten-year term and vest annually over a three-year period from the dates of grant.

As of December 31, 2011, options to purchase an aggregate of 9,569,860 shares of common stock were exercisable under the Company's stock option plans. During the years ended December 31, 2011 and 2010, the Company did not issue options to purchase shares of common stock with exercise prices below the fair market value of the common stock on the dates of grant.

Stock option transactions under the Company's stock option plans for the years ended December 31, 2010 and 2011 are summarized below:

	Shares	Weighted Average Per Share Exercise Price	Weighted Average Remaining Contractual Term	Aggregate Intrinsic Value
Balance, December 31, 2009	13,538,498	$ 1.41		
Granted	280,000	$ 0.16		
Exercised	—	$ —		
Expired	(1,339,650)	$ 1.56		
Forfeited	(337,208)	$ 0.46		
Balance, December 31, 2010	12,141,640	$ 1.39		
Granted	180,000	$ 0.13		
Exercised	—	$ —		
Expired	(258,665)	$ 0.20		
Forfeited	(1,262,119)	$ 1.59		
Balance, December 31, 2011	10,800,856	$ 1.38	4.7 years	$ 0
Vested and expected to vest	10,562,272	$ 1.40	4.7 years	$ 0
Exercisable, December 31, 2011	9,569,860	$ 1.53	4.3 years	$ 0

As of December 31, 2011, options available for future grant under the 2006 Stock Incentive Plan amounted to 4,250,136.

Information regarding stock options outstanding at December 31, 2011 is as follows:

	Options Outstanding			Options Exercisable	
Range of exercise prices	Number outstanding at December 31, 2011	Weighted average remaining contractual life	Weighted average exercise price	Number exercisable at December 31, 2011	Weighted average exercise price
$0.13 - $0.20	2,873,000	7.8 years	$ 0.19	1,702,004	$ 0.20
0.20 - 0.54	1,035,630	6.3 years	0.50	975,630	0.51
0.54 - 0.78	1,140,899	0.8 years	0.77	1,140,899	0.77
0.78 - 1.30	1,716,562	5.2 years	1.17	1,716,562	1.17
1.30 - 2.35	956,799	3.8 years	2.33	956,799	2.33
2.35 - 2.68	960,000	2.8 years	2.68	960,000	2.68
2.68 - 2.76	1,015,000	1.9 years	2.76	1,015,000	2.76
2.76 - 3.38	1,085,017	3.8 years	2.99	1,085,017	2.99
3.77 - 4.40	17,949	1.7 years	4.28	17,949	4.28
	10,800,856	4.7 years	1.38	9,569,860	1.53

As of December 31, 2011, the Company had reserved an aggregate of 3,679 shares for issuance upon conversion of the Series B Preferred; 25,818,319 shares for issuance upon exercise of warrants; 10,800,856 shares for issuance upon exercise of outstanding stock options; and 4,250,136 shares for issuance upon exercise of stock options available for future grant.

Stockholder Rights Plan

On February 5, 2002, the Company's Board of Directors approved the adoption of a Stockholder Rights Plan to protect stockholder interests against takeover strategies that may not provide maximum stockholder value. A dividend of one Right (each, a "Right" and, collectively, the "Rights") for each outstanding share of the Company's common stock was distributed to stockholders of record on February 15, 2002. The Stockholder Rights Plan and the related Rights terminated by their terms on February 15, 2012.

Note 5 — Transactions with Servier

In October 2000, the Company entered into a research collaboration agreement and an exclusive license agreement with Les Laboratoires Servier. The license agreement, as amended and in effect until June 2011, allowed Servier to develop and commercialize three AMPAKINE compounds selected at the end of the research collaboration in defined territories of Europe, Asia, the Middle East and certain South American countries as a treatment for (i) declines in cognitive performance associated with aging, (ii) neurodegenerative diseases and (iii) anxiety disorders.

In connection with the agreement with Servier, the Company received approximately $21,000,000, including an upfront payment and research support, with the most recent payment earned during the year ended December 31, 2006. The research collaboration with Servier was terminated at the end of 2006; accordingly the worldwide rights for (a) treatment of declines in cognitive performance associated with aging, (b) neurodegenerative diseases, (c) anxiety disorders, and (d) sexual dysfunction have been returned to the Company. In November 2010, Servier selected the jointly discovered AMPAKINE CX1632 (S47445) to advance into Phase I clinical testing.

In June 2011, the Company's agreements with Servier were amended and restated with an option agreement for the AMPAKINE CX1632. Servier provided an immediate, non-refundable payment of $1,000,000 to the Company for the option to expand its rights to the compound. In late September 2011, Servier exercised its option for CX1632.

Following the notification, in October 2011 Servier paid the Company an additional $2,000,000, and assumed the Company's obligation to pay certain royalties and milestone payments to the University of California, from whom the Company has licensed rights to the AMPAKINE technology. The Company assigned its rights to its patents and patent applications for CX1632 and Servier acquired sole ownership of the global patent rights to the compound, along with a sub-license of the Company's rights to all indications licensed from the University of California for use with CX1632.

Following the exercise of the option, the Company will not be entitled to any royalties or further payments from Servier's development and commercialization of CX1632. However, the Company retains all rights for the remaining AMPAKINE technology previously subject to the agreements with Servier on a worldwide basis.

Note 6 — Transactions with Biovail

In March 2010, the Company entered into an asset purchase agreement with Biovail Laboratories International SRL ("Biovail"). Pursuant to the asset purchase agreement, Biovail acquired the Company's interests in CX717, CX1763, CX1942 and the injectable dosage form of CX1739, as well as certain of its other AMPAKINE compounds and related intellectual property for use in the field of respiratory depression or vaso-occlusive crises associated with sickle cell disease. In connection with the transaction, Biovail paid the Company $10,000,000. In addition, the agreement provided the Company with the right to receive milestone payments in an aggregate amount of up to $15,000,000 plus the reimbursement of certain related expenses, conditioned upon the occurrence of particular events relating to the clinical development of certain assets that Biovail acquired. None of these events have occurred and accordingly, the Company did not record any milestone revenue related to the Biovail transaction.

As part of the transaction, Biovail licensed back to the Company certain exclusive and irrevocable rights to some acquired AMPAKINE compounds, other than CX717, an injectable dosage form of CX1739, CX1763 and CX1942, for use outside of the field of respiratory depression or vaso-occlusive crises associated with sickle cell disease. Accordingly, following the transaction with Biovail, the Company retained its rights to develop and commercialize the non-acquired AMPAKINE compounds as a potential treatment for neurological diseases and psychiatric disorders. Additionally, the Company retained its rights to develop and commercialize the AMPAKINE compounds as a potential treatment for sleep apnea disorders, including an oral dosage form of AMPAKINE CX1739.

In September 2010, Biovail's parent corporation, Biovail Corporation, combined with Valeant Pharmaceuticals International in a merger transaction and the combined company was renamed "Valeant Pharmaceuticals International, Inc." ("Valeant"). Following the merger, Valeant and Biovail conducted a strategic and financial review of its product pipeline and, as a result, in November 2010, Biovail announced its intent to exit from the respiratory depression project acquired from the Company in March 2010.

Following that announcement, the Company entered into discussions with Biovail regarding the future of the respiratory depression project. In March 2011, the Company entered into a new agreement with Biovail to reacquire the AMPAKINE compounds, patents and rights that Biovail acquired from the Company in March 2010. The new agreement includes an upfront payment by Cortex of $200,000 and potential future payments of up to $15,150,000 based upon the achievement of certain development and New Drug Application submission and approval milestones. Biovail is also eligible to receive additional payments of up to $15,000,000 based upon the Company's net sales of an intravenous dosage form of the compounds for respiratory depression.

The Company has recorded the $200,000 upfront payment to reacquire the respiratory depression project from Biovail as research and development expense during year ended December 31, 2011.

At any time following the completion of Phase I clinical studies and prior to the end of Phase IIa clinical studies, Biovail retains an option to co-develop and co-market intravenous dosage forms of an AMPAKINE compound as a treatment for respiratory depression and vaso-occlusive crises associated with sickle cell disease. In such an event, the Company would be reimbursed for certain development expenses to date and Biovail would share in all such future development costs with the Company. If Biovail makes the co-marketing election, the Company would owe no further milestone payments to Biovail and the Company would be eligible to receive a royalty on net sales of the compound by Biovail or its affiliates and licensees.

Note 7 — Advance from the Institute for the Study of Aging

In June 2000, the Company received $247,300 from the Institute for the Study of Aging (the "Institute") to fund testing of the Company's AMPAKINE CX516 in patients with mild cognitive impairment ("MCI"). Patients with MCI represent the earliest clinically-defined group with memory impairment beyond that expected for normal individuals of the same age and education, but such patients do not meet the clinical criteria for Alzheimer's disease. The Institute is a non-profit foundation based in New York City and dedicated to the improvement in quality of life for the elderly.

Provided that the Company complies with the conditions of the funding agreement, repayment of the advance has been extended until the Company enters one of its AMPAKINE compounds into Phase III clinical trials for Alzheimer's disease. Upon such potential clinical trials, repayment would include the principal amount plus accrued interest computed at a rate equal to one-half of the prime lending rate. In lieu of cash, in the event of repayment the Institute may elect to receive the outstanding principal balance and any accrued interest thereon as shares of the Company's common stock. The conversion price for such form of repayment shall initially equal $4.50 per share, subject to adjustment under certain circumstances. Included in the balance sheet is accrued principal and interest of approximately $324,000 and $320,000 at December 31, 2011 and 2010, respectively.

Note 8 — Commitments and Contingencies

The Company leases its offices and research laboratories under an operating lease that expires May 31, 2012. The related lease agreement includes scheduled rent increases that are recorded on a straight-line basis over the lease term. Rent expense under this lease for the years ended December 31, 2011 and 2010 was approximately $607,000 and $564,000, respectively. Commitments under the lease for the five months ending May 31, 2012 are approximately $248,000, respectively.

As of December 31, 2011, the Company has employment agreements with three of its executive officers that involve annual salary payments approximating $982,000 and provide for bonuses under certain circumstances. The agreements expire in May 2012, August 2012 and August 2014.

The Company has entered into severance agreements with each of its executive officers. In the event of a termination of employment, under certain circumstances, these severance agreements provide defined benefits to the executive officers, including compensation equal to 12 months of the executive officer's then current salary. Based upon the salary levels of the executive officers as of December 31, 2011, the severance agreements provide for potential payments ranging from $221,000 to $370,000, with the total for all executive officers approximating $1,445,000.

In March 2009 the Company's executive officers and other key personnel entered into retention bonus agreements to foster the continuous employment of such individuals. Under such agreements, the employee will be entitled to receive a lump sum cash bonus equal to an additional six (6) months of the employee's base salary in the event of a change in control of the Company, subject to certain circumstances. Based upon the salary levels of the executive officers as of December 31, 2011, the retention bonus agreements potentially provide for payments ranging from $110,500 to $185,000, with the total for all executive officers approximating $723,000.

Commitments for services to be rendered for preclinical and clinical studies amount to approximately $174,000. Separately, commitments under sponsored research agreements for services to be rendered in connection with the Company's grant from the Michael J. Fox Foundation for Parkinson's Research approximated $48,000, which costs will be paid with funds awarded and received under the grant.

The Company has entered agreements with an academic institution that provide the Company exclusive rights to certain of the technologies that the Company is developing. Under the terms of the agreements, the Company is committed to royalty payments, including minimum annual royalties of approximately $70,000 for the year ended December 31, 2012 and for each year thereafter for the remaining life of the patents covering the subject technologies. The date of the last to expire patent related to the subject technologies currently is January 2025. The agreements commit the Company to spend a minimum of $250,000 per year to advance the AMPAKINE compounds until the Company begins marketing an A MPAKINE compound. The Company is currently in compliance with its diligence obligations, but it is not in compliance with its minimum annual royalty payments for 2012. If the Company does not make the minimum annual payments, the University could provide the Company with written notice and the opportunity to repair the noncompliance. If the Company does not subsequently repair the noncompliance within the provided timeframe, it could allow the University to terminate that particular agreement. The agreements also commit the Company to pay up to an additional $875,000 upon achievement of certain clinical testing and regulatory approval milestones, and to remit a portion of certain remuneration received in connection with sublicensing agreements.

Note 9 — Related Party Transactions

Under certain circumstances, the Company is obligated to make royalty payments to certain of its scientific consultants, some of whom are stockholders, upon successful commercialization of certain of its products by the Company or its licensees.

Note 10 — Income Taxes

The Company uses the liability method of accounting for income taxes as set forth in ASC 740 (formerly Statement of Financial Accounting Standards No. 109, "Accounting for Income Taxes" ("SFAS 109")). Under the liability method, deferred taxes are determined based on differences between the financial statement and tax bases of assets and liabilities using enacted tax rates. As of December 31, 2011, the Company had federal and California tax net operating loss carryforwards of approximately $82,886,000 and $83,513,000, respectively. The difference between the federal and California tax loss carryforwards is primarily attributable to the capitalization of research and development expenses for California franchise tax purposes. The federal and California net operating loss carryforwards will expire at various dates from 2012 through 2031. The Company also has federal and California research and development tax credit carryforwards totaling approximately $2,093,000 and $1,146,000, respectively. The federal research and development tax credit carryforwards will expire at various dates from 2012 through 2031. The California research and development tax credit carryforward does not expire and will carryforward indefinitely until utilized.

The Company's effective tax rate is different from the federal statutory rate of 35% due primarily to operating losses that receive no tax benefit as a result of a valuation allowance recorded for such losses.

Pursuant to Internal Revenue Code Sections 382 and 383, use of the Company's net operating loss and credit carryforwards may be limited if a cumulative change in ownership of more than 50% occurs within any three-year period since the last ownership change. The Company may have had a change in control under these Sections. However, the Company does not anticipate performing a complete analysis of the limitation on the annual use of the net operating loss and tax credit carryforwards until the time that it projects it will be able to utilize these tax attributes.

Significant components of the Company's deferred tax assets as of December 31, 2011 and December 31, 2010 are shown below. A valuation allowance of $40,079,000 as of December 31, 2011 has been established against the Company's deferred tax assets as realization of such assets is uncertain. The increase in the valuation allowance of $996,000 from December 31, 2010 to December 31, 2011 relates primarily to continuing net operating losses.

Deferred tax assets consist of the following:

	December 31, 2011	December 31, 2010
Net operating loss carryforwards	33,796,000	$ 32,554,000
Research and development credits	3,239,000	3,165,000
Capitalized research and development costs	475,000	850,000
Non-cash stock-based compensation	2,299,000	2,280,000
Depreciation	137,000	105,000
Other, net	133,000	129,000
Net deferred tax assets	40,079,000	39,083,000
Valuation allowance for deferred tax assets	(40,079,000)	(39,083,000)
Total deferred tax assets	$ —	$ —

The provision for income taxes for the year ended December 31, 2011 differs from the amount computed by applying the federal income tax rate as follows:

Tax computed at the statutory rate	35.0%
State tax, net of the federal tax benefit	5.8%
Nondeductible expenses	0.0%
Nontaxable income	0.0%
Expirations and true-ups of net operating loss carryforwards	3.4%
Valuation allowance for deferred tax assets	(44.2)%
	—

In July 2006, the FASB issued guidance which clarified the accounting for uncertainty in income taxes recognized in an enterprise's financial statements (formerly FASB Interpretation No. 48, "Accounting for Uncertainty in Income Taxes"). This guidance prescribed a recognition threshold and measurement attribute for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. The guidance also addressed derecognition, classification, interest and penalties, accounting in interim periods, disclosure, and transition. These provisions were effective for fiscal years beginning after December 15, 2006. The cumulative effect, if any, of applying these provisions is to be reported as an adjustment to the opening balance of retained earnings in the year of adoption. The impact of the Company's reassessment of its tax positions in accordance with this guidance did not have a material effect on the Company's results of operations, financial condition or liquidity. The provisions of this guidance have been incorporated into ASC 740-10.

As of December 31, 2011, the Company does not have any unrecognized tax benefits related to various federal and state income tax matters. The Company will recognize accrued interest and penalties related to unrecognized tax benefits in income tax expense.

The Company is subject to U.S. federal income tax as well as income tax of multiple state tax jurisdictions. The Company is currently open to audit under the statute of limitations by the Internal Revenue Service for the years ending December 31, 2008 through 2010. The Company and its subsidiaries' state income tax returns are open to audit under the statute of limitations for the years ended December 31, 2007 through 2010. The Company does not anticipate any material amount of unrecognized tax benefits within the next 12 months.

Signatures

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

CORTEX PHARMACEUTICALS, INC.

Date: March 30, 2012

By: /s/ Mark A. Varney, Ph.D.
Mark A. Varney, Ph.D.
President and Chief Executive Officer

We, the undersigned directors and officers of Cortex Pharmaceuticals, Inc., do hereby constitute and appoint each of Roger G. Stoll, Ph.D., Mark A. Varney, Ph.D. and Maria S. Messinger as our true and lawful attorneys-in-fact and agents with power of substitution, to do any and all acts and things in our name and behalf in our capacities as directors and officers and to execute any and all instruments for us and in our names in the capacities indicated below, which said attorneys-in-fact and agents, or either of them, may deem necessary or advisable to enable said corporation to comply with the Securities and Exchange Act of 1934, as amended, and any rules, regulations and requirements of the Securities and Exchange Commission, in connection with this Annual Report on Form 10-K, including specifically but without limitation, power and authority to sign for us or any of us in our names in the capacities indicated below, any and all amendments (including post-effective amendments) hereto; and we do hereby ratify and confirm all that said attorney-in-fact and agent, shall do or cause to be done by virtue hereof.

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

Signature	Title	Date
/s/ Mark A. Varney, Ph.D. Mark A. Varney, Ph.D.	President, Chief Executive Officer (Principal Executive Officer) and Director	March 30, 2012
/s/ Maria S. Messinger Maria S. Messinger	Vice President, Chief Financial Officer (Principal Financial and Accounting Officer) and Secretary	March 30, 2012
/s/ Robert F. Allnutt Robert F. Allnutt	Director	March 30, 2012
/s/ John F. Benedik John F. Benedik	Director	March 30, 2012
/s/ Charles J. Casamento Charles J. Casamento	Director	March 30, 2012
/s/ Carl W. Cotman, Ph.D. Carl W. Cotman, Ph.D.	Director	March 30, 2012
/s/ Peter F. Drake, Ph.D. Peter F. Drake, Ph.D.	Director	March 30, 2012
/s/ M. Ross Johnson, Ph.D. M. Ross Johnson, Ph.D.	Director	March 30, 2012
/s/ Roger G. Stoll, Ph.D. Roger G. Stoll, Ph.D.	Chairman of the Board	March 30, 2012

Cortex Pharmaceuticals, Inc.
Annual Report on Form 10-K
Year ended December 31, 2011
Exhibit Index

Exhibit Number	Description	
3.1	Second Restated Certificate of Incorporation dated May 19, 2010, incorporated by reference to the same numbered Exhibit to the Company's Current Report on Form 8-K filed May 24, 2010.	—
3.2	By-Laws of the Company, as adopted March 4, 1987, and amended on October 8, 1996, incorporated by reference to the same numbered Exhibit to the Company's Annual Report on Form 10-KSB filed October 15, 1996.	—
3.5	Certificate of Amendment of By-Laws of the Company, incorporated by reference to the same numbered Exhibit to the Company's Report on Form 8-K filed November 15, 2007.	—
4.3	Placement Agency Agreement, dated August 24, 2007, by and between Cortex Pharmaceuticals, Inc. and JMP Securities LLC and Rodman and Renshaw, LLC, Form of Subscription Agreement and Form of Common Stock Purchase Warrant issued by Cortex Pharmaceuticals, Inc., incorporated by reference to Exhibits 1.1, 1.2 and 4.1, respectively, to the Company's Report on Form 8-K filed August 27, 2007.	—
4.4	Placement Agency Agreement, dated April 13, 2009, by and between the Company and Rodman & Renshaw, LLC, Form of Securities Purchase Agreement and Form of Common Stock Purchase Warrant issued by the Company, incorporated by reference to Exhibits 1.1, 1.2 and 4.1, respectively, to the Company's Current Report on Form 8-K filed April 17, 2009.	—
10.19	License Agreement dated March 27, 1991 between the Company and the Regents of the University of California, incorporated by reference to the same numbered Exhibit to the Company's Amendment on Form 8 filed November 27, 1991 to the Company's Annual Report on Form 10-K filed September 30, 1991. (Portions of this Exhibit are omitted and were filed separately with the Secretary of the Commission pursuant to the Company's application requesting confidential treatment under Rule 24b-2 under the Securities Exchange Act of 1934).	—
10.31	License Agreement dated June 25, 1993, as amended, between the Company and the Regents of the University of California, incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-Q filed February 12, 2004. (Portions of this exhibit are omitted and were filed separately with the Secretary of the Commission pursuant to the Company's application requesting confidential treatment under Rule 24b-2 of the Securities Exchange Act of 1934).	—
10.44	Lease Agreement, dated January 31, 1994, for the Company's facilities in Irvine, California, incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-QSB filed May 16, 1994.	—
10.60	Amended and Restated 1996 Stock Incentive Plan, incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-Q as filed on November 14, 2002.*	—
10.65	Amendment No. 1 to the Lease Agreement for the Company's facilities in Irvine, California, dated February 1, 1999, incorporated by reference to the same numbered Exhibit to the Company's Annual Report on Form 10-KSB filed September 28, 1999.	—
10.67	Collaborative Research, Joint Clinical Research and Licensing Agreements with Les Laboratoires Servier dated October 13, 2000, incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-QSB filed November 14, 2000. (Portions of this Exhibit were omitted and filed separately with the Secretary of the Commission pursuant to the Company's application requesting confidential treatment under Rule 24b-2 of the Securities Act of 1934).	—
10.69	Employment agreement dated May 17, 2000, between the Company and James H. Coleman, incorporated by reference to the same numbered Exhibit to the Company's Report on Form 10-QSB filed February 12, 2001.*	
10.70	Severance agreement dated October 26, 2000, between the Company and Maria S. Messinger, incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-QSB filed February 12, 2001.*	—

Exhibit Number	Description	
10.73	Amendment dated October 3, 2002 to the Collaboration Research Agreement with Les Laboratoires Servier dated October 13, 2000, incorporated by reference to the same numbered Exhibit to the Company's Annual Report on Form 10-K filed October 15, 2002.	—
10.74	Employment agreement dated October 29, 2002 between the Company and Roger G. Stoll, Ph.D., incorporated by reference to the same numbered exhibit to the Company's Quarterly Report on Form 10-Q, as filed on November 14, 2002.*	—
10.76	First Amendment dated August 8, 2003 to the employment agreement between the Company and Roger G. Stoll, Ph.D., incorporated by reference to the same numbered Exhibit to the Company's Annual Report on Form 10-K filed September 19, 2003.*	—
10.77	Amendment dated December 16, 2003 to the Collaboration Research Agreement with Les Laboratoires Servier dated October 13, 2000, incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-Q filed February 12, 2004. (Portions of this Exhibit are omitted and were filed separately with the Secretary of the Commission pursuant to the Company's application requesting confidential treatment under Rule 24b-2 of the Securities Exchange Act of 1934).	—
10.79	Amendment No. 2 to the Lease Agreement for the Company's facilities in Irvine, California, dated March 9, 2004, incorporated by reference to the same numbered Exhibit to the Company's Annual Report on Form 10-K filed on September 27, 2004.	—
10.80	Form of Incentive/Nonqualified Stock Option Agreement under the Company's Amended and Restated 1996 Stock Incentive Plan, incorporated by reference to the same numbered Exhibit to the Company's Annual Report on Form 10-K filed on September 27, 2004.*	—
10.81	Form of Restricted Stock Award under the Company's Amended and Restated 1996 Stock Incentive Plan, incorporated by reference to the same numbered Exhibit to the Company's Annual Report on Form 10-K filed on September 27, 2004.*	—
10.82	Amendment dated January 1, 2004 to the employment agreement dated May 17, 2000 between the Company and James H. Coleman, incorporated by reference to the same numbered Exhibit to the Company's Annual Report on Form 10-K filed on September 27, 2004.*	—
10.86	Second Amendment dated November 10, 2004 to the employment agreement dated October 29, 2002 between the Company and Roger G. Stoll, Ph.D., incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-Q filed on November 15, 2004.*	—
10.88	Form of Notice of Grant of Stock Options and Stock Option Agreement under the Company's Amended and Restated 1996 Stock Incentive Plan, incorporated by reference to the same numbered Exhibit to the Company's Annual Report on Form 10-K filed March 21, 2005.*	—
10.89	Stock Ownership Policy for the Company's Directors and Executive Officers as adopted by the Company's Board of Directors on December 16, 2004, incorporated by reference to the same numbered Exhibit to the Company's Annual Report on Form 10-K filed March 21, 2005.*	—
10.90	Third Amendment dated August 13, 2005 to the employment agreement dated October 29, 2002 between the Company and Roger G. Stoll, Ph.D, incorporated by reference to Exhibit 10.1 to the Company's Report on Form 8-K filed August 17, 2005.*	—
10.92	Employment letter of agreement dated January 9, 2006 between the Company and Mark Varney, Ph.D., incorporated by reference to the same numbered Exhibit to the Company's Annual Report on Form 10-K filed March 16, 2006.*	—
10.93	Non-qualified Stock Option Agreement dated January 30, 2006 between the Company and Mark Varney, Ph.D., incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-Q filed May 9, 2006.*	—
10.94	Cortex Pharmaceuticals, Inc. 2006 Stock Incentive Plan, incorporated by reference to the same numbered Exhibit to the Company's Report on Form 8-K filed May 11, 2006.*	—
10.96	Form of Notice of Grant of Stock Options and Stock Option Agreement under the Company's 2006 Stock Incentive Plan, incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-Q filed August 8, 2006.*	—

Exhibit Number	Description	
10.97	Form of Incentive/Non-qualified Stock Option Agreement under the Company's 2006 Stock Plan, incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-Q filed August 8, 2006.*	—
10.98	Amendment No. 3, dated April 1, 2006, to the Lease Agreement for the Company's facilities in Irvine, California, incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-Q filed August 8, 2006.	—
10.100	Negative Equity Agreement dated February 1, 2007 between the Company and Mark A. Varney, Ph.D., incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-Q filed May 10, 2007.*	—
10.101	Amendment No. 1 to the Company's 2006 Stock Incentive Plan, incorporated by reference to the same numbered Exhibit to the Company's Current Report on Form 8-K filed May 15, 2007.*	—
10.102	Amendment to the Exclusive License Agreement between the Company and The Regents of the University of California, dated as of June 1, 2007, incorporated by reference to the same numbered Exhibit to the Company's Current Report on Form 8-K filed June 7, 2007.	—
10.105	Patent License Agreement between the Company and the University of Alberta, dated as of May 9, 2007, incorporated by reference to the same numbered Exhibit to the Company's Annual Report on Form 10-K filed March 17, 2008.. (Portions of this Exhibit are omitted and were filed separately with the Secretary of the Commission pursuant to the Company's application requesting confidential treatment under Rule 24b-2 under the Securities Exchange Act of 1934).	—
10.107	Severance Agreement dated May 2, 2008, between the Company and Steven A. Johnson, Ph.D., incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-Q filed May 8, 2008.*	—
10.108	Amendment No. 4, dated June 6, 2008, to the Lease Agreement for the Company's facilities in Irvine, California, incorporated by reference to the same numbered Exhibit to the Company's Report on Form 8-K filed June 10, 2008.	—
10.109	Fourth Amendment, dated July 11, 2008, to the employment agreement dated October 29, 2002 between the Company and Roger G. Stoll, Ph.D., incorporated by reference to the same Numbered Exhibit to the Company's Report on Form 8-K filed July 17, 2008.*	—
10.110	Amendment No. 2 to Employment Agreement, dated as of December 22, 2008, between the Company and James H. Coleman, incorporated by reference to the same numbered Exhibit to the Company's Report on Form 8-K filed December 23, 2008.*	—
10.111	Amendment No. 1 Severance Agreement, dated as of December 22, 2008, between the Company and Maria S. Messinger, incorporated by reference to the same numbered Exhibit to the Company's Report on Form 8-K filed December 23, 2008.*	—
10.112	Employment Agreement, dated as of December 19, 2008, between the Company and Mark A. Varney, Ph.D., incorporated by reference to the same numbered Exhibit to the Company's Report on Form 8-K filed December 23, 2008.*	—
10.113	Form of Retention Bonus Agreement, dated March 13, 2009, between the Company and each of its executive officers, incorporated by reference to the same numbered Exhibit to the Company's Current Report on Form 8-K filed March 19, 2009.*	—
10.114	Securities Purchase Agreement, dated July 29, 2009, by and between the Company and the Investor, including a form of Registration Rights Agreement attached as Exhibit B thereto and a form of Common Stock Purchase Warrant attached as Exhibit C thereto, incorporated by reference to the same numbered Exhibit to the Company's Current Report on Form 8-K filed July 30, 2009.	—
10.115	Amendment No. 2 to the Company's 2006 Stock Incentive Plan, effective as of June 5, 2009, incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-Q filed August 14, 2009.*	—
10.116	Asset Purchase Agreement, dated March 25, 2010, by and between the Company and Biovail Laboratories International SRL, incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-Q filed on May 17, 2010. (Portions of this Exhibit are omitted and were filed separately with the Secretary of the Commission pursuant to the Company's application requesting confidential treatment under Rule 24b-2 of the Securities Exchange Act of 1934).	—

Exhibit Number	Description	
10.117	License Agreement, dated March 25, 2010, by and between the Company and Biovail Laboratories International SRL, incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-Q filed on May 17, 2010. (Portions of this Exhibit are omitted and were filed separately with the Secretary of the Commission pursuant to the Company's application requesting confidential treatment under Rule 24b-2 of the Securities Exchange Act of 1934).	—
10.118	Amendment No. 3 to the Company's 2006 Stock Incentive Plan, incorporated by reference to the same numbered Exhibit to the Company's Current Report on Form 8-K filed May 24, 2010.*	—
10.119	Sixth Amendment dated August 12, 2010 to the employment agreement dated October 29, 2002 between the Company and Roger G. Stoll, incorporated by reference to the same numbered Exhibit to the Company's Report on Form 8-K filed August 18, 2010.*	—
10.120	Amendment to the License Agreement between the Company and The Regents of the University of California, dated as of August 24, 2010, incorporated by reference to the same numbered Exhibit to the Company's Report on Form 8-K filed August 30, 2010	—
10.121	Fifth Amendment to the License Agreement between the Company and The Regents of the University of California, dated as of March 15, 2011, incorporated by reference to the same numbered Exhibit to the Company's Current Report on Form 8-K filed March 21, 2011.	—
10.122	Asset Purchase Agreement dated March 15, 2011 by and between the Company and Biovail Laboratories SRL, incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-Q filed May 23, 2011. (Portions of this exhibit are omitted and were filed separately with the Secretary of the Commission pursuant to the Company's application requesting confidential treatment under Rule 24b-2 of the Securities Exchange Act of 1934).	—
10.123	First Amendment dated August 2, 2011 to the Employment Agreement dated December 19, 2008 between the Company and Mark A. Varney, Ph.D., incorporated by reference to the same numbered Exhibit to the Company's Current Report on Form 8-K filed August 8, 2011.*	—
10.124	Seventh Amendment dated August 2, 2011 to the Employment Agreement dated October 29, 2002 between the Company and Roger G. Stoll, Ph.D., incorporated by reference to the same numbered Exhibit to the Company's Current Report on Form 8-K filed August 8, 2011.*	—
10.125	Patent Assignment and Option and Amended and Restated Agreement dated June 10, 2011 between the Company and Les Laboratoires Servier, incorporated by reference to the same numbered Exhibit to the Company's Quarterly Report on Form 10-Q filed August 18, 2011. (Portions of this exhibit are omitted and were filed separately with the Secretary of the Commission pursuant to the Company's application requesting confidential treatment under Rule 24b-2 of the Securities Exchange Act of 1934.	—
10.126	Securities Purchase Agreement, dated January 15, 2010, by and between the Company and Samyang Optics Co., Ltd., including a form of Promissory Note attached as Exhibit A thereto and a form of Common Stock Purchase Warrant attached as Exhibit B thereto, incorporated by reference to Exhibit 10.116 to the Company's Current Report on Form 8-K filed January 21, 2010.	—
10.127	Securities Purchase Agreement, dated October 20, 2011, by and between the Company and Samyang Value Partners Co., Ltd., including a form of Common Stock Purchase Warrant attached as Exhibit C thereto.	—
21	Subsidiaries of the Registrant.	—
23.1	Consent of Haskell & White LLP, Independent Registered Public Accounting Firm.	—
24	Power of Attorney (included as part of the signature page of this Annual Report on Form 10-K).	—
31.1	Certification of Chief Executive Officer Pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934.	—
31.2	Certification of Chief Financial Officer Pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934.	—

Exhibit Number	Description	
32	Certification of Chief Executive Officer and Chief Financial Officer Pursuant to Rule 13a-14(b)/15d-14(b) of the Securities Exchange Act of 1934 and 18 U.S.C. Section 1350.	—
101.INS	XBRL Instance Document.†	
101.SCH	XBRL Taxonomy Extension Schema Document.†	
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document.†	
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document.†	
101.LAB	XBRL Taxonomy Extension Label Linkbase Document.†	
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document.†	

* Each of these Exhibits constitutes a management contract, compensatory plan or arrangement.

† The XBRL information is being furnished and not filed for purposes of section 18 of the Securities Exchange Act of 1934, as amended, and is not incorporated by reference into any registration statement under the Securities Act of 1933, as amended.

Exhibit 10.127

CORTEX PHARMACEUTICALS, INC.
SECURITIES PURCHASE AGREEMENT

This Securities Purchase Agreement (the "Agreement") is entered into as of October 20, 2011 (the "Effective Date"), between Cortex Pharmaceuticals, Inc., a Delaware corporation (the "Company"), and Samyang Value Partners Co., Ltd., a South Korean corporation (the "Purchaser").

R E C I T A L S:

Purchaser desires to purchase, and the Company desires to sell and issue to Purchaser, shares of common stock and related warrants to purchase common stock of the Company, with a par value of US$0.001 per share, in accordance with the terms and conditions of the Agreement.

A G R E E M E N T:

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged, the parties agree as follows:

1. Definitions. Capitalized terms used in the Agreement and not otherwise defined herein shall have the meanings set forth on Annex A hereto.

2. Sale and Issuance of the Shares and Warrants.

(a) Subject to the satisfaction of the terms and conditions of the Closing set forth herein and in reliance upon the respective representations and warranties of the parties set forth herein or in any document delivered pursuant hereto, the Company agrees to issue and sell to Purchaser upon the Closing such number of shares of its Common Stock equal to the Purchase Price divided by the Weighted Average Closing Price of the Common Stock for the five (5) Trading Day period immediately prior to the Effective Date. The parties hereby agree that the number of shares shall equal 6,765,466 and the deemed purchase price per share shall be approximately $0.0739.

(b) Concurrently with the issuance of the Shares in subparagraph (a) above, upon the Closing the Purchaser shall be issued Warrants to purchase a number of shares of Common Stock equal to twenty-five percent (25%) of the total number of Shares. The initial exercise price of the Warrants shall be an amount per share of Common Stock equal to one hundred forty percent (140%) of the price per Share calculated in subparagraph (a) above. The Warrants shall be in the form attached hereto as Exhibit A. The parties hereby agree that the number of shares subject to the Warrant shall equal 1,691,367 and the deemed exercise price per share shall be $0.1035.

3. Delivery of the Shares and Warrants at the Closing. The closing of the purchase and sale of the Shares and the Warrants contemplated hereunder (the "Closing") shall be held as of the same date herewith or at such other time upon which the Company and the Purchaser shall mutually agree (the " Closing Date"); provided, however, that to the extent that the Company has not received the Purchase Price on or prior to the seventh (7 th) Business Day following the Effective Date, unless the Company otherwise expressly agrees in writing, this Agreement shall automatically terminate without penalty to the Company. On the Closing Date, the Company shall have received from the Purchaser via wire transfer an amount equal to the Purchase Price and the Company will issue and deliver to the Purchaser the Shares and the Warrants.

4. Purchaser's Representations. The Purchaser hereby represents and warrants to the Company as follows:

(a) The Purchaser is an entity duly organized, validly existing and in good standing under the laws of the jurisdiction of its organization with full right, corporate or partnership power and authority to enter into and to consummate the transactions contemplated by hereby and otherwise to carry out its obligations hereunder.

(b) The execution and delivery of the Agreement and performance by the Purchaser of the transactions contemplated by the Agreement have been duly authorized by all necessary corporate, partnership, limited liability company or similar action, as applicable, on the part of the Purchaser.

(c) The Agreement has been duly executed by the Purchaser, and when delivered by the Purchaser in accordance with the terms hereof, will constitute the valid and legally binding obligation of the Purchaser, enforceable against it in accordance with its terms, except: (i) as limited by general equitable principles and applicable bankruptcy, insolvency, reorganization, moratorium and other laws of general application affecting enforcement of creditors' rights generally, (ii) as limited by laws relating to the availability of specific performance, injunctive relief or other equitable remedies and (iii) insofar as indemnification and contribution provisions may be limited by applicable law.

(d) The execution, delivery and performance by the Purchaser of the Agreement and the consummation by it of the transactions contemplated thereby do not and will not (i) conflict with or violate any provision of the Purchaser's certificate or articles of incorporation, bylaws or other organizational or charter documents, or (ii) conflict with or result in a violation of any law, rule, regulation, order, judgment, injunction, decree or other restriction of any court or governmental authority to which the Purchaser is subject (including federal and state securities laws and regulations), or by which any property or asset of the Purchaser is bound or affected, except in the case subparagraph (ii) such as could not have or reasonably be expected to have a material adverse effect on the Purchaser.

(e) The Purchaser is acquiring the Shares and the Warrants, as well as the shares of Common Stock underlying the Warrants, if any (collectively referred to with the Shares and Warrants as the "Securities"), for the Purchaser's own account and not as a nominee or agent for any other person, and not with the view to, or for sale in connection with, any distribution thereof.

(f) The Purchaser is an "accredited investor," as the Purchaser is a person or entity described in one of the items in Annex B attached hereto.

(g) The Purchaser is not purchasing the Securities as a result of any advertisement, article, notice or other communication regarding the Securities published in any newspaper, magazine or similar media or broadcast over television or radio or presented at any seminar or any other general solicitation or general advertisement.

(h) The Purchaser understands that the Securities are being offered and sold to it in reliance upon specific exemptions from the registration requirements of federal and state securities laws and that the Company is relying upon the truth and accuracy of, and the Purchaser's compliance with, the representations, warranties, agreements, acknowledgements and understandings of the Purchaser set forth herein in order to determine the availability of such exemptions and the eligibility of the Purchaser to acquire the Securities.

(i) The offer and sale of the Securities has not been registered under the Securities Act, and that, accordingly, they will not be transferable except as permitted under various exemptions set

forth in the Securities Act, or upon satisfaction of the registration and prospectus delivery requirements of the Securities Act, and that there will be a legend printed upon the Securities so indicating.

(j) The Securities may not be sold, transferred, assigned, pledged, hypothecated or otherwise disposed of unless the Purchaser first provides to the Company an opinion of counsel to the effect that such sale, transfer, assignment, pledge, hypothecation or other disposition will be exempt from the registration and prospectus delivery requirements of the Securities Act and the registration or qualification requirements of any applicable state securities' law.

5. Company's Representations. The Company hereby represents and warrants to the Purchaser as follows:

(a) The Company is an entity duly organized, validly existing and in good standing under the laws of the jurisdiction of its organization with full right, corporate or partnership power and authority to enter into and to consummate the transactions contemplated by hereby and otherwise to carry out its obligations hereunder.

(b) The execution and delivery of the Agreement and performance by the Company of the transactions contemplated by the Agreement have been duly authorized by all necessary corporate, partnership, limited liability company or similar action, as applicable, on the part of the Company.

(c) The Agreement has been duly executed by the Company, and when delivered by the Company in accordance with the terms hereof, will constitute the valid and legally binding obligation of the Company, enforceable against it in accordance with its terms, except: (i) as limited by general equitable principles and applicable bankruptcy, insolvency, reorganization, moratorium and other laws of general application affecting enforcement of creditors' rights generally, (ii) as limited by laws relating to the availability of specific performance, injunctive relief or other equitable remedies and (iii) insofar as indemnification and contribution provisions may be limited by applicable law.

(d) The execution, delivery and performance by the Company of the Agreement and the consummation by it of the transactions contemplated thereby do not and will not (i) conflict with or violate any provision of the Company's certificate or articles of incorporation, bylaws or other organizational or charter documents, or (ii) conflict with or result in a violation of any law, rule, regulation, order, judgment, injunction, decree or other restriction of any court or governmental authority to which the Company is subject (including federal and state securities laws and regulations), or by which any property or asset of the Company is bound or affected, except in the case subparagraph (ii) such as could not have or reasonably be expected to have a material adverse effect on the Company.

(e) The authorized and outstanding capital stock of the Company is set forth on Annex C attached hereto. All issued and outstanding shares have been duly authorized and validly issued and are fully paid and nonassessable. Except as set forth on Annex C, there are no other outstanding rights, options, warrants, preemptive rights, rights of first refusal, or similar rights for the purchase or acquisition from the Company of any securities of the Company nor are there any commitments to issue or execute any such rights, options, warrants, preemptive rights or rights of first refusal. Except as otherwise provided in the Company's certificate of incorporation, there are no outstanding rights or obligations of the Company to repurchase or redeem any of its securities. The respective rights, preferences, privileges, and restrictions of the Company's outstanding shares are as stated in the Company's certificate of incorporation. All outstanding securities have been issued in compliance with all applicable securities laws.

(f) There is no action, suit, proceeding, or investigation (including without limitation any suit, proceeding, or investigation involving the prior employment of any of the Company's employees, their use in connection with the Company's business of any information or techniques allegedly proprietary to any of their former employers, or their obligations under any agreements with prior employers) against or adverse to the Company pending or, to the best of the Company's knowledge, currently threatened before any court, administrative agency, or other governmental body. The Company is not a party or subject to, and none of its assets is bound by, the provisions of any order, writ, injunction, judgment, or decree of any court or government agency or instrumentality. There is no action, suit, or proceeding by the Company currently pending or that the Company intends to initiate.

(g) The Company has fully provided the Purchaser with all the information that the Purchaser has requested for deciding whether to purchase the Shares and the Warrants. Neither this Agreement, nor any other agreements, statements or certificates made or delivered in connection herewith or therewith contains any untrue statement of a material fact or, when taken together, omits to state a material fact necessary to make the statements herein or therein, in light of the circumstances under which they were made, not misleading.

6. Conditions to Closing of the Purchaser. The Purchaser's obligation to purchase the Shares and the Warrants at Closing in accordance with the terms set forth herein is subject to the fulfillment on or prior to the Closing Date of each of the following conditions:

(a) Representations and Warranties Correct. The representations and warranties made by the Company in Section 5 hereof shall be true and correct when made and shall be true and correct on and as of the Closing Date with the same force and effect as if they had been made on and as of said date.

(b) Covenants. All covenants, agreements and conditions contained in this Agreement to be performed by the Company on or prior to the Closing Date shall have been performed or complied with in all material respects.

(c) No Material Adverse Change. There shall have been no material adverse change in the Company's business or financial condition.

7. Conditions to Closing of the Company. The Company's obligation to issue and sell the Shares and the Warrants at Closing in accordance with the terms set forth herein is subject to the fulfillment on or prior to the Closing Date of each of the following conditions:

(a) Representations and Warranties Correct. The representations and warranties made by the Purchaser in Section 4 hereof shall be true and correct when made and shall be true and correct on and as of the Closing Date with the same force and effect as if they had been made on and as of said date.

(b) Covenants. All covenants, agreements and conditions contained in this Agreement to be performed by the Purchaser on or prior to the Closing Date shall have been performed or complied with in all material respects.

8. Right of First Refusal. The Shares and the shares of Common Stock underlying the Warrants (the "Subject Shares") may be sold by the Purchaser only in compliance with the provisions of this Section 8, and subject in all cases to compliance with applicable securities laws. Prior to any intended sale of more than an aggregate of 500,000 Subject Shares in any two (2) Business Day period, the Purchaser shall first give written notice (the " Offer Notice") to the Company specifying (i) its bona

fide intention to sell or otherwise transfer such Subject Shares and (ii) the number of Subject Shares the Purchaser proposes to sell (the " Offered Shares"). Within two (2) Business Days after receipt of the Offer Notice, the Company or its nominee(s) may elect to negotiate in good faith with the Purchaser to purchase all (not some) of such Offered Shares. In the event that the Company elects to purchase all (not some) of such Offered Shares, the Purchaser and the Company shall negotiate in good faith to consummate a transaction for such Offered Shares within five (5) Business Days following the Company's election. If the Company and the Purchaser fail to agree upon a purchase price following good faith negotiation between the Company and the Purchaser, or otherwise any single share of the Offered Shares is not to be purchased by the Company, all the Offered Shares may be sold by the Purchaser without any of the restrictions set forth in this Section 7.

9. "Market Stand-Off" Agreement. The Purchaser agrees that, if requested by the Company or the managing underwriter of any proposed public offering of the Company's securities, the Purchaser will not sell or otherwise transfer or dispose of any shares of Common Stock held by the Purchaser without the prior written consent of the Company or such underwriter, as the case may be, during such period of time, not to exceed 180 days following the effective date of the registration statement filed by the Company with respect to such offering, as the Company or the underwriter may specify. In order to enforce the foregoing covenant, the Company may impose stop transfer instructions with respect to any shares of Common Stock held by the Purchaser until the end of such period.

10. Observer and Information Rights. If, and for such time as, the Purchaser owns not less than fifteen percent (15%) of the then outstanding shares of Common Stock, (i) the Purchaser may, at its sole election, appoint a representative reasonably acceptable to the Company to attend all meetings of the Company's Board of Directors in a nonvoting observer capacity and, in this respect, the Company shall deliver to such representative of the Purchaser copies of all notices, minutes, consents, and other materials that it provides to its directors generally, and (ii) the Purchaser shall be entitled to receive access to the Company's quarterly financial statements and at least semi-annual updates on the status of the Company's compound developments on or about the same time as provided to the Company's Board of Directors; provided, however, that in each case, such representative of the Purchaser (and the Purchaser) shall agree to hold in confidence and trust and to act in a fiduciary manner with respect to all information so provided, and shall cause their respective agents and affiliates, as applicable, to do the same; and provided further, that the Company reserves the right to withhold any information from the representative and the Purchaser and, as applicable, to exclude such representative of the Purchaser from any meeting or portion thereof, if access to such information or attendance at such meeting could adversely affect the attorney-client privilege between the Company and its counsel or result in disclosure of trade secrets or a conflict of interest. In exercising its rights hereunder, the Purchaser expressly acknowledges and agrees that it shall not, and shall cause its agents, affiliates and representatives to not, utilize such information provided hereunder other than for purposes consistent with the Company's best interests and shall not acquire or dispose of any of the Company's securities in violation of securities laws.

11. Miscellaneous.

(a) Binding on Successors. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns.

(b) Entire Agreement. This Agreement and the exhibits hereto, constitute the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior and contemporaneous agreements, whether written or oral, and shall not be modified except by a writing signed by the parties hereto.

(c) Governing Law. All questions concerning the construction, validity, enforcement and interpretation of the Agreement shall be governed by and construed and enforced in accordance with the laws of the State of California, without regard to the principles of conflicts of law thereof. Each party agrees that all legal proceedings concerning the interpretations, enforcement and defense of the transactions contemplated by this Agreement (whether brought against a party hereto or its respective affiliates, directors, officers, shareholders, employees or agents) shall be commenced exclusively in the courts sitting in Hong Kong. Each party hereby irrevocably submits to the exclusive jurisdiction of the courts sitting in Hong Kong for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein (including with respect to the enforcement of the Agreement), and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, action or proceeding is improper or is an inconvenient venue for such proceeding. Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Agreement and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any other manner permitted by law. If either party shall commence an action or proceeding to enforce any provisions of the Agreement, then the prevailing party in such action or proceeding shall be reimbursed by the other party for its reasonable attorneys' fees and other costs and expenses incurred with the investigation, preparation and prosecution of such action or proceeding.

(d) Headings; References. All headings used herein are used for convenience only and shall not be used to construe or interpret this Agreement. Except as otherwise indicated, all references herein to Sections refer to Sections hereof.

(e) No Waiver. No waiver of any of the provisions contained in this Agreement shall be valid unless made in writing and executed by the waiving party. It is expressly understood that in the event any party shall on any occasion fail to perform any term of this Agreement and the other parties shall not enforce that term, the failure to enforce on that occasion shall not prevent enforcement of that or any other term hereof on any other occasion.

(f) Severability. If any section of this Agreement is held invalid by any law, rule, order, regulation, or promulgation of any jurisdiction, such invalidity shall not affect the enforceability of any other sections not held to be invalid.

(g) Notices. All notices and other communications hereunder shall be in writing and shall be deemed given if properly addressed: (i) if delivered personally, by commercial delivery service or by facsimile (with acknowledgment of a complete transmission prior to 5:30 p.m. Los Angeles time), on the day of delivery, (ii) if delivered by U.S. nationally recognized overnight courier service, on the next Business Day after mailing, or (iii) upon actual receipt by the party to whom such notice is required by be given.

Notices shall be deemed to be deemed properly addressed to any party hereto if addressed to the following addresses (or at such other address for a party as shall be specified by like notice):

(i) if to Purchaser, to:

Samyang Value Partners Co., Ltd.
Seoyeong Bldg. 12F
158-12 Samsung Dong
Gangnam Gu
Seoul, Korea
Attention:
Telephone:
Facsimile:
Email:

(ii) if to the Company:

Cortex Pharmaceuticals, Inc.
15231 Barranca Parkway
Irvine, California 92618
Attention: Chief Executive Officer
Telephone: (949) 727-3157
Facsimile: (949) 727-3657
Email: mvarney@cortexpharm.com

with a copy to (which shall not constitute notice):

Stradling Yocca Carlson & Rauth
660 Newport Center Drive, Suite 1600
Newport Beach, CA 92660
Attention: Lawrence B. Cohn
Telephone: (949) 725-4000
Facsimile: (949) 725-4100
Email: lcohn@sycr.com

(h) Successors and Assigns. This Agreement shall be binding upon and inure to the benefit of the parties and their successors and permitted assigns.

(i) Counterparts. This Agreement and any amendment thereof may be executed in two or more counterparts, each of which shall be deemed an original for all purposes. In the event that any signature is delivered by facsimile transmission or by e-mail delivery of a ".pdf" format data file, such signature shall create a valid and binding obligation of the party executing (or on whose behalf such signature is executed) with the same force and effect as if such facsimile or ".pdf" signature page were an original thereof.

(j) Saturdays, Sundays, Holidays, etc. If the last or appointed day for the taking of any action or the expiration of any right required or granted herein shall not be a Business Day, then such action may be taken or such right may be exercised on the next succeeding Business Day.

****

(Signature Page Follows)

The Company and the Purchaser have executed this Agreement as of the Effective Date.

"Company"

CORTEX PHARMACEUTICALS, INC.

By:

Mark A. Varney, Ph.D.
President and Chief Executive Officer

"Purchaser"

SAMYANG VALUE PARTNERS CO., LTD.

By:

Soung Jin Kim
President and Chief Executive Officer

ANNEX A

Definitions

"Agreement" shall mean this Securities Purchase Agreement.

"Business Day" shall mean any day except any Saturday, any Sunday, any day which is a federal legal holiday in the United States or any day on which banking institutions in the State of California are authorized or required by law or other governmental action to close.

"Closing" shall have the meaning set forth in Section 3 of the Agreement.

"Closing Date" shall have the meaning set forth in Section 3 of the Agreement.

"Common Stock" shall mean common stock of the Company, par value of US$0.001 per share.

"Company" shall mean Cortex Pharmaceuticals, Inc., a Delaware corporation.

"Effective Date" shall have the meaning set forth in the preambles to the Agreement.

"Offer Notice" shall have the meaning set forth in Section 8 of the Agreement.

"Offered Shares" shall have the meaning set forth in Section 8 of the Agreement.

"Purchase Price" shall mean US$500,000.

"Purchaser" shall mean Samyang Value Partners Co., Ltd., a South Korean corporation.

"Securities" shall have the meaning set forth in Section 4(e) of the Agreement.

"Securities Act" shall mean the Securities Act of 1933, as amended.

"Shares" shall mean the shares of Common Stock which are to be purchased pursuant to Section 2(a) of the Agreement.

"Subject Shares" shall have the meaning set forth in Section 8 of the Agreement.

"Trading Day" shall mean a day on which the principal Trading Market is open for trading.

"Trading Market" shall mean a market or exchange on which the Common Stock is then listed or quoted for trading, including, without limitation, the NYSE Amex Equities Market, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market or the New York Stock Exchange, the OTC Bulletin Board or a Pink OTC Market (or any successors to any of the foregoing).

"Warrants" shall mean the warrants to purchase shares of Common Stock which are to be purchased pursuant to Section 2(b) of the Agreement.

"Weighted Average Closing Price" shall mean the price determined by the first of the following clauses that applies: (A) if the Common Stock is then listed or quoted for trading on a Trading Market other than the OTC Bulletin Board or the Pink OTC Market, the volume-weighted average closing prices of the Common Stock on the Trading Market on which the Common Stock is then listed or quoted for trading as reported by Bloomberg L.P., (B) if the Common Stock is then listed or quoted for trading on

the OTC Bulletin Board, the volume-weighted average closing prices of the Common Stock on the OTC Bulletin Board, or (C) if the Common Stock is not then listed or quoted for trading on the OTC Bulletin Board and if prices for the Common Stock are then reported in the "Pink Sheets" published by Pink OTC Markets, Inc. (or a similar organization or agency succeeding to its functions of reporting prices), the closing bid prices per share of the Common Stock so reported.

ANNEX B

Accredited Investor

An "accredited investor" is:

1. Any bank as defined in section 3(a)(2) of the Act, or any savings and loan association or other institution as defined in section 3(a)(5)(A) of the Act whether acting in its individual or fiduciary capacity; any broker or dealer registered pursuant to section 15 of the Securities Exchange Act of 1934; any insurance company as defined in section 2(13) of the Act; any investment company registered under the Investment Company Act of 1940 or a business development company as defined in section 2(a)(48) of that Act; any Small Business Investment Company licensed by the U.S. Small Business Administration under section 301(c) or (d) of the Small Business Investment Act of 1958; any plan established and maintained by a state, its political subdivisions, or any agency or instrumentality of a state or its political subdivisions for the benefit of its employees, if such plan has total assets in excess of $5,000,000; any employee benefit plan within the meaning of the Employee Retirement Income Security Act of 1974 if the investment decision is made by a plan fiduciary, as defined in section 3(21) of such Act, which is either a bank, savings and loan association, insurance company, or registered investment adviser, or if the employee benefit plan has total assets in excess of $5,000,000 or, if a self-directed plan, with investment decisions made solely by persons that are accredited investors;

2. Any private business development company as defined in section 202(a)(22) of the Investment Advisers Act of 1940;

3. Any organization described in Section 501(c)(3) of the Internal Revenue Code, corporation, Massachusetts or similar business trust, or partnership, not formed for the specific purpose of acquiring the securities offered, with total assets in excess of $5,000,000;

4. Any director, executive officer, or general partner of the issuer of the securities being offered or sold, or any director, executive officer, or general partner of a general partner of that issuer;

5. Any natural person whose individual net worth, or joint net worth with that person's spouse, at the time of his purchase exceeds $1,000,000;

6. Any natural person who had an individual income in excess of $200,000 in each of the two most recent years or joint income with that person's spouse in excess of $300,000 in each of those years and has a reasonable expectation of reaching the same income level in the current year;

7. Any trust, with total assets in excess of $5,000,000, not formed for the specific purpose of acquiring the securities offered, whose purchase is directed by a sophisticated person as described in § 230.506(b)(2)(ii); and

8. Any entity in which all of the equity owners are accredited investors.

The term "net worth" means the excess of total assets over total liabilities. **In computing net worth for the purpose of (5) above, (i) persons must exclude the value of their primary residence, and (ii) persons may exclude any mortgage or any other debt secured by their primary residence that does not exceed the fair market value of the residence.** If, however, the amount of such debt exceeds the fair market value of the residence, persons are required to deduct the excess liability from the net worth calculation.

ANNEX C

Authorized and Outstanding Capital Stock

As of the date of the Agreement, authorized capital of the Company includes 205,000,000 shares of Common Stock and 5,000,000 shares of Preferred Stock, of which 1,250,000 shares have been designated as 9% Cumulative Convertible Preferred Stock; 205,000 shares have been designated as Series A Junior Participating Preferred Stock; 37,500 shares have been designated as Series B Convertible Preferred Stock; and 3,507,500 shares remain undesignated.

As of the date of the Agreement, the Company has 78,858,197 shares of Common Stock and 37,500 shares of Series B Convertible Preferred Stock outstanding.

As of the date of the Agreement, the Company's issued and outstanding options and other securities convertible into, or exercisable for, shares of the Company's Common Stock consist of the following:

1. 9,813,766 shares of Common Stock authorized for issuance under the Company's 2006 Stock Incentive Plan; and

2. 5,203,426 shares of Common Stock subject to issued and outstanding options under the Company's 1996 Stock Incentive Plan; and

3. 350,000 shares of Common Stock subject to issued and outstanding options outside of the Company's 2006 Stock Incentive Plan and 1996 Stock Incentive Plan; and

4. 24,126,952 shares of Common Stock reserved for issuance upon the exercise of outstanding warrants; and

5. 37,500 shares of Series B Convertible Preferred Stock, each share of which is convertible into approximately 0.09812 shares of Common Stock; and

6. 71,728 shares of Common Stock potentially issuable upon repayment of an advance to fund the Company's expenses for its clinical study in patients with Mild Cognitive Impairment, such number of shares based upon the balance of the advance and accrued interest as of September 30, 2011.

Each of the foregoing securities includes anti-dilution provisions in the event of stock dividends, stock splits or reclassifications of the Company's Common Stock.

EXHIBIT A

Form of Warrant

NEITHER THIS SECURITY NOR THE SECURITIES FOR WHICH THIS SECURITY IS EXERCISABLE HAVE BEEN REGISTERED WITH THE SECURITIES AND EXCHANGE COMMISSION OR THE SECURITIES COMMISSION OF ANY STATE IN RELIANCE UPON AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), AND, ACCORDINGLY, MAY NOT BE OFFERED OR SOLD EXCEPT PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT OR PURSUANT TO AN AVAILABLE EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN ACCORDANCE WITH APPLICABLE STATE SECURITIES LAWS AS EVIDENCED BY A LEGAL OPINION OF COUNSEL TO THE TRANSFEROR TO SUCH EFFECT, THE SUBSTANCE OF WHICH SHALL BE REASONABLY ACCEPTABLE TO THE COMPANY. ADDITIONALLY, THE SECURITIES FOR WHICH THIS SECURITY IS EXERCISABLE ARE SUBJECT TO A RIGHT OF FIRST REFUSAL IN FAVOR OF THE COMPANY AS SET FORTH IN THAT CERTAIN SECURITIES PURCHASE AGREEMENT DATED OCTOBER 20, 2011.

COMMON STOCK PURCHASE WARRANT

CORTEX PHARMACEUTICALS, INC.

Warrant Shares: 1,691,367 Issue Date: October 20, 2011

THIS COMMON STOCK PURCHASE WARRANT (the "Warrant") certifies that, for value received, Samyang Value Partners Co., Ltd. (the "Holder") is entitled, upon the terms and subject to the limitations on exercise and the conditions hereinafter set forth, at any time on or prior to the close of business on the two year anniversary of the original Issue Date (the " Termination Date") but not thereafter, to subscribe for and purchase from Cortex Pharmaceuticals, Inc., a Delaware corporation (the " Company"), up to One Million Six Hundred Ninety-One Thousand Three Hundred Sixty-Seven (1,691,367) shares (the "Warrant Shares") of Common Stock. The purchase price of one share of Common Stock under this Warrant shall be equal to the Exercise Price, as defined in Section 2(b).

Section 1. Definitions. In addition to the terms defined elsewhere in this Warrant, the following terms shall have the meanings set forth in this Section 1:

"Business Day" shall mean any day except any Saturday, any Sunday, any day which is a federal legal holiday in the United States or any day on which banking institutions in the State of California are authorized or required by law or other governmental action to close.

"Common Stock" means the common stock of the Company, par value $0.001 per share, and any other class of securities into which such securities may hereafter be reclassified or changed.

"Trading Day" means a day on which the principal Trading Market is open for trading.

"Trading Market" means a market or exchange on which the Common Stock is then listed or quoted for trading, including, without limitation, the NYSE Amex Equities Market, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market or the New York Stock Exchange, the OTC Bulletin Board or a Pink OTC Market (or any successors to any of the foregoing).

"Transaction Documents" means the Securities Purchase Agreement dated October 20, 2011 between the Company and the purchaser signatory thereto (the "Purchase Agreement"), as well as the other agreements and documents contemplated thereby.

"Weighted Average Closing Price" means the price determined by the first of the following clauses that applies: (A) if the Common Stock is then listed or quoted for trading on a Trading Market other than the OTC Bulletin Board or the Pink OTC Market, the volume-weighted average closing prices of the Common Stock on the Trading Market on which the Common Stock is then listed or quoted for trading as reported by Bloomberg L.P., (B) if the Common Stock is then listed or quoted for trading on the OTC Bulletin Board, the volume-weighted average closing prices of the Common Stock on the OTC Bulletin Board, or (C) if the Common Stock is not then listed or quoted for trading on the OTC Bulletin Board and if prices for the Common Common Stock are then reported in the "Pink Sheets" published by Pink OTC Markets, Inc. (or a similar organization or agency succeeding to its functions of reporting prices), the closing bid prices per share of the Common Stock so reported.

Section 2. Exercise.

a) Exercise of Warrant. Exercise of the purchase rights represented by this Warrant may be made, in whole or in part, at any time or times on or before the Termination Date by delivery to the Company (or such other office or agency of the Company as it may designate by notice in writing to the registered Holder at the address of the Holder appearing on the books of the Company) of a duly executed copy of the Notice of Exercise Form annexed hereto, the original Warrant certificate and payment of the aggregate Exercise Price of the shares thereby purchased by wire transfer or cashier's check drawn on a United States bank.

b) Exercise Price. The exercise price per share of the Common Stock under this Warrant shall be $0.1035, subject to adjustment hereunder (the "Exercise Price").

c) Mechanics of Exercise.

i. Delivery of Certificates Upon Exercise. Certificates for shares purchased hereunder shall be transmitted by the Company or the Company's transfer agent to the Holder promptly after the date of exercise. This Warrant shall be deemed to have been exercised on the first date on which all of the items in Section 2(a) above have been delivered to

the Company. The Warrant Shares shall be deemed to have been issued, and Holder shall be deemed to have become a holder of record of such shares for all purposes, as of the date the Warrant has been properly exercised, with payment to the Company of the Exercise Price prior to the issuance of such shares, having been paid.

ii. Delivery of New Warrants Upon Exercise. If this Warrant shall have been exercised in part, the Company shall, at the request of a Holder and upon surrender of this Warrant certificate, at the time of delivery of the certificate or certificates representing Warrant Shares, deliver to Holder a new Warrant evidencing the rights of Holder to purchase the unpurchased Warrant Shares called for by this Warrant, which new Warrant shall in all other respects be identical with this Warrant.

iii. No Fractional Shares or Scrip. No fractional shares or scrip representing fractional shares shall be issued upon the exercise of this Warrant. As to any fraction of a share which the Holder would otherwise be entitled to purchase upon such exercise, the Company shall, at its election, either pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the Exercise Price or round up to the next whole share.

iv. Charges, Taxes and Expenses. Issuance of certificates for Warrant Shares shall be made without charge to the Holder for any issue or transfer tax or other incidental expense in respect of the issuance of such certificate, all of which taxes and expenses shall be paid by the Company, and such certificates shall be issued in the name of the Holder.

v. Closing of Books. The Company will not close its stockholder books or records in any manner which prevents the timely exercise of this Warrant, pursuant to the terms hereof.

d) Representation by the Holder; Restrictions. The Holder, by the acceptance hereof, represents and warrants that it is acquiring this Warrant and, upon any exercise hereof, will acquire the Warrant Shares issuable upon such exercise, for its own account and not with a view to or for distributing or reselling such Warrant Shares or any part thereof in violation of the Securities Act or any applicable state securities law. The Holder acknowledges that the Warrant Shares acquired upon the exercise of this Warrant, if not registered, will have restrictions upon resale imposed by state and federal securities laws and will contain one or more legends relating thereto. The Holder further acknowledges that the Warrant Shares may not be offered or sold except in compliance with the Company's right of first refusal contained in the Purchase Agreement and pursuant to an effective registration statement under the Securities Act or pursuant to an available exemption from, or in a transaction not subject to, the registration requirements of the Securities Act and in accordance with applicable state securities laws as evidenced

by a legal opinion of counsel to the transferor to such effect, the substance of which shall be reasonably acceptable to the Company.

e) Call Provision. Subject to the provisions of this Section 2(e), if (i) the Weighted Average Closing Price for each of 10 consecutive Trading Days (the "Measurement Period") exceeds one and one-half (1.5) times the Exercise Price (subject to adjustment for forward and reverse stock splits, recapitalizations, stock dividends and the like after the original Issue Date) and (ii) the Holder is not in possession of any information that constitutes, or might constitute, material non-public information which was provided by the Company, then the Company may, within 3 Trading Days of the end of such Measurement Period, call for cancellation of all or any portion of this Warrant for which a Notice of Exercise has not yet been delivered (such right, a "Call") for consideration equal to $0.001 per Share. To exercise this right, the Company must deliver to the Holder an irrevocable written notice (a "Call Notice"); indicating therein the portion of unexercised portion of this Warrant to which such notice applies. If the conditions set forth below for such Call are satisfied from the period from the date of the Call Notice through and including the Call Date (as defined below), then any portion of this Warrant subject to such Call Notice for which a Notice of Exercise shall not have been received by the Call Date will be cancelled at 6:30 p.m. (Los Angeles time) on the tenth Trading Day after the date the Call Notice is received by the Holder (such date and time, the " Call Date"). Any unexercised portion of this Warrant to which the Call Notice does not pertain will be unaffected by such Call Notice. In furtherance thereof, the Company covenants and agrees that it will honor all Notices of Exercise with respect to Warrant Shares subject to a Call Notice that are tendered through 6:30 p.m. (Los Angeles time) on the Call Date. The parties agree that any Notice of Exercise delivered following a Call Notice which calls less than all the Warrants shall first reduce to zero the number of Warrant Shares subject to such Call Notice prior to reducing the remaining Warrant Shares available for purchase under this Warrant. For example, if (A) this Warrant then permits the Holder to acquire 100 Warrant Shares, (B) a Call Notice pertains to 75 Warrant Shares, and (C) prior to 6:30 p.m. (Los Angeles time) on the Call Date the Holder tenders a Notice of Exercise in respect of 50 Warrant Shares, then (x) on the Call Date the right under this Warrant to acquire 25 Warrant Shares will be automatically cancelled, (y) the Company, in the time and manner required under this Warrant, will have issued and delivered to the Holder 50 Warrant Shares in respect of the exercises following receipt of the Call Notice, and (z) the Holder may, until the Termination Date, exercise this Warrant for 25 Warrant Shares (subject to adjustment as herein provided and subject to subsequent Call Notices). Subject again to the provisions of this Section 2(e), the Company may deliver subsequent Call Notices for any portion of this Warrant for which the Holder shall not have delivered a Notice of Exercise. Notwithstanding anything to the contrary set forth in this Warrant, the Company may not deliver a Call Notice or require the cancellation of this Warrant (and any such Call Notice shall be void), unless, from the beginning of the Measurement Period through the Call Date, (1) the Company shall have honored in accordance with the terms of this Warrant all Notices of Exercise delivered by 6:30 p.m. (Los Angeles time) on the Call Date, and (2) the Common Stock shall be listed or quoted for trading on the Trading Market, and (3) there is a sufficient number of authorized shares of Common Stock for issuance of all securities under the Transaction Documents.

Section 3. Certain Adjustments.

a) Stock Dividends and Splits. If the Company, at any time while this Warrant is outstanding: (i) pays a stock dividend or otherwise makes a distribution or distributions on shares of its Common Stock or any other equity or equity equivalent securities payable in shares of Common Stock (which, for avoidance of doubt, shall not include any shares of Common Stock issued by the Company upon exercise of this Warrant), (ii) subdivides outstanding shares of Common Stock into a larger number of shares, (iii) combines (including by way of reverse stock split) outstanding shares of Common Stock into a smaller number of shares, or (iv) issues by reclassification of shares of the Common Stock any shares of capital stock of the Company, then in each case the Exercise Price shall be multiplied by a fraction of which the numerator shall be the number of shares of Common Stock (excluding treasury shares, if any) outstanding immediately before such event and of which the denominator shall be the number of shares of Common Stock outstanding immediately after such event, and the number of shares issuable upon exercise of this Warrant shall be proportionately adjusted such that the aggregate Exercise Price of this Warrant shall remain unchanged. Any adjustment made pursuant to this Section 3(a) shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution and shall become effective immediately after the effective date in the case of a subdivision, combination or re-classification.

b) Calculations. All calculations under this Section 3 shall be made to the nearest cent or the nearest 1/100th of a share, as the case may be. For purposes of this Section 3, the number of shares of Common Stock deemed to be issued and outstanding as of a given date shall be the sum of the number of shares of Common Stock (excluding treasury shares, if any) issued and outstanding.

c) Notice to Holder. Whenever the Exercise Price is adjusted pursuant to any provision of this Section 3, the Company shall promptly mail to the Holder a notice setting forth the Exercise Price after such adjustment and setting forth a brief statement of the facts requiring such adjustment.

Section 4. Transfer of Warrant.

a) Transferability. This Warrant evidenced hereby may not be pledged, sold, assigned or transferred.

b) Warrant Register. The Company shall register this Warrant, upon records to be maintained by the Company for that purpose (the " Warrant Register"), in the name of the record Holder hereof from time to time. The Company may deem and treat the registered Holder of this Warrant as the absolute owner hereof for the purpose of any exercise hereof or any distribution to the Holder, and for all other purposes, absent actual written notice to the contrary.

Section 5. Miscellaneous.

a) No Rights as Stockholder Until Exercise. This Warrant does not entitle the Holder to any voting rights, dividends or other rights as a stockholder of the Company prior to the exercise hereof as set forth in Section 2(c)(i).

b) Loss, Theft, Destruction or Mutilation of Warrant. The Company covenants that upon receipt by the Company of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of this Warrant or any stock certificate relating to the Warrant Shares, and in case of loss, theft or destruction, of indemnity or security reasonably satisfactory to it, and upon surrender and cancellation of such Warrant or stock certificate, if mutilated, the Company will make and deliver a new Warrant or stock certificate of like tenor and dated as of such cancellation, in lieu of such Warrant or stock certificate.

c) Saturdays, Sundays, Holidays, etc. If the last or appointed day for the taking of any action or the expiration of any right required or granted herein shall not be a Business Day, then, such action may be taken or such right may be exercised on the next succeeding Business Day.

d) Authorized Shares.

The Company covenants that, during the period the Warrant is outstanding, it will reserve from its authorized and unissued Common Stock a sufficient number of shares to provide for the issuance of the Warrant Shares upon the exercise of any purchase rights under this Warrant.

Except and to the extent as waived or consented to by the Holder, the Company shall not by any action, including, without limitation, amending its certificate of incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such actions as may be necessary or appropriate to protect the rights of Holder as set forth in this Warrant against impairment.

Before taking any action which would result in an adjustment in the number of Warrant Shares for which this Warrant is exercisable or in the Exercise Price, the Company shall obtain all such authorizations or exemptions thereof, or consents thereto, as may be necessary from any public regulatory body or bodies having jurisdiction thereof.

e) Effect of Consolidation, Merger or Sale. Notwithstanding anything in this Warrant to the contrary, this Warrant shall expire upon any (i) consolidation or merger of the Company with another entity, or any statutory exchange of securities with another entity, whereby the holders of voting capital stock of the Company immediately prior to such transaction hold less than 50% of the voting capital stock following such

transaction, (ii) sale or all or substantially all of the Company's assets to another entity or (iii) liquidation of the Company. The Company shall give the Holder at least fifteen (15) days advance notice of the closing of such transaction at its last address as it shall appear upon the Warrant Register of the Company; provided that the failure to mail such notice or any defect therein or in the mailing thereof shall not affect the validity of the corporate action required to be specified in such notice.

f) Governing Law. All questions concerning the construction, validity, enforcement and interpretation of this Warrant shall be determined in accordance with the provisions of the Purchase Agreement.

g) Nonwaiver. No course of dealing or any delay or failure to exercise any right hereunder on the part of Holder or the Company shall operate as a waiver of such right or otherwise prejudice Holder's or the Company's respective rights, powers or remedies.

h) Notices. Any notice, request or other document required or permitted to be given or delivered to the Holder by the Company shall be delivered in accordance with the notice provisions of the Purchase Agreement.

i) Successors and Assigns. Subject to applicable securities laws, this Warrant and the rights and obligations evidenced hereby shall inure to the benefit of and be binding upon the successors and permitted assigns of the Company and the successors and permitted assigns of Holder.

j) Amendment. This Warrant may be modified or amended or the provisions hereof waived with the written consent of the Company and the Holder.

k) Severability. Wherever possible, each provision of this Warrant shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Warrant shall be prohibited by or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provisions or the remaining provisions of this Warrant.

l) Headings. The headings used in this Warrant are for the convenience of reference only and shall not, for any purpose, be deemed a part of this Warrant.

****

(Signature Page Follows)

IN WITNESS WHEREOF, the Company and the Holder have caused this Warrant to be executed by their respective officers thereunto duly authorized.

CORTEX PHARMACEUTICALS, INC.

Dated: October 20, 2011

By: _____
Name: Mark A. Varney, Ph.D.
Title: Chief Executive Officer

Accepted and agreed to this day of , 2011

SAMYANG VALUE PARTNERS CO., LTD.

By: _____
Name: Soung Jin Kim
Title: President and Chief Executive Officer

NOTICE OF EXERCISE

TO: CORTEX PHARMACEUTICALS, INC.

(1) The undersigned hereby elects to purchase Warrant Shares of the Company pursuant to the terms of the attached Warrant, and tenders herewith payment of the exercise price in full, together with all applicable transfer taxes, if any.

(2) Payment shall take the form of lawful money of the United States.

(3) Please issue a certificate or certificates representing said Warrant Shares in the name of the undersigned.

The Warrant Shares shall be delivered by physical delivery of a certificate to:

_____

_____

_____

(4) The undersigned is an "accredited investor" as defined in Rule 501(a)(1), (a)(2), (a)(3), (a)(7) or (a)(8) under the Securities Act of 1933, as amended.

[SIGNATURE OF HOLDER]

Name of Investing Entity: _____

Signature of Authorized Signatory of Investing Entity: _____

Name of Authorized Signatory: _____

Title of Authorized Signatory: _____

Date: _____

ASSIGNMENT FORM

(To assign the foregoing warrant, execute
this form and supply required information.
Do not use this form to exercise the warrant.)

FOR VALUE RECEIVED, [_____] all of or [_____] shares of the foregoing Warrant and all rights evidenced thereby are hereby assigned to

_____ whose address is

_____ .

_____

Dated: _____, ____

Holder's Signature: _____

Holder's Address: _____

_____

Signature Guaranteed: _____

NOTE: The signature to this Assignment Form must correspond with the name as it appears on the face of the Warrant, without alteration or enlargement or any change whatsoever, and must be guaranteed by a bank or trust company. Officers of corporations and those acting in a fiduciary or other representative capacity should file proper evidence of authority to assign the foregoing Warrant.

EXHIBIT 21

Subsidiaries of the Registrant

Cortex UK Limited, incorporated in the United Kingdom

Orchid Acquisition Corp. (inactive), incorporated in the state of Delaware

Rose Acquisition Corp. (inactive), incorporated in the state of Delaware

EXHIBIT 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the Registration Statements (No. 333-161143, No. 333-155749, No. 333-138844, No. 333-122026, No. 333-112043, and No. 333-108948) on Form S-3 of Cortex Pharmaceuticals, Inc. and in the related Prospectus and in the Registration Statements (No. 333-143374, No. 333-134490, No. 333-102042, No. 333-82477, and No. 333-20777) on Form S-8 and pertaining to the 2006 and 1996 Stock Incentive Plans, the Mark A. Varney Non-Qualified Stock Option Agreement dated January 30, 2006 and the Leslie Street Non-Qualified Stock Option Agreement dated March 5, 2007, the 1989 Incentive Stock Option, Nonqualified Stock Option and Stock Purchase Plan, the 1989 Special Nonqualified Stock Option and Stock Purchase Plan, and the Executive Stock Plan, of Cortex Pharmaceuticals, Inc. of our report dated March 30, 2012, with respect to the financial statements of Cortex Pharmaceuticals, Inc. included in its Annual Report on Form 10-K for the year ended December 31, 2011, and to the reference to us under the heading "Experts" in the Prospectuses, which is part of the registration statements.

/s/ HASKELL & WHITE LLP

Irvine, California
March 30, 2012

EXHIBIT 31.1

CERTIFICATION

I, Mark A. Varney, Ph.D., certify that:

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

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

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

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

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

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

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

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

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

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

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

Date: March 30, 2012

/s/ Mark A. Varney, Ph.D.

Mark A. Varney, Ph.D.
President and Chief Executive Officer

EXHIBIT 31.2

CERTIFICATION

I, Maria S. Messinger, certify that:

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

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

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

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

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

   (b) Designed such internal control over financial reporting or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles.

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

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

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

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

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

Date: March 30, 2012

/s/ Maria S. Messinger

Maria S. Messinger
Vice President, Chief Financial Officer and Secretary

EXHIBIT 32

CERTIFICATION

Mark A. Varney, Ph.D., President and Chief Executive Officer of Cortex Pharmaceuticals, Inc. (the "Company"), and Maria S. Messinger, Chief Financial Officer of the Company, each hereby certifies, pursuant to Rule 13a-14(b) or Rule 15d-14(b) of the Securities Exchange Act of 1934, 18 U.S.C. Section 1350, that:

(1) the Annual Report on Form 10-K of the Company for the year ended December 31, 2011 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

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

Dated: March 30, 2012

/s/ Mark A. Varney, Ph.D.
Mark A. Varney, Ph.D.
President and Chief Executive Officer

Dated: March 30, 2012

/s/ Maria S. Messinger
Maria S. Messinger
Vice President, Chief Financial Officer and Secretary

This certification accompanies the Annual Report pursuant to Rule 13a-14(b) or Rule 15d-14(b) under the Securities Exchange Act of 1934 and 18 U.S.C. Section 1350 and shall not be deemed filed by the Company for purposes of Section 18 of the Securities Exchange Act of 1934.