ADEONA PHARMACEUTICALS, INC.
Form 424B5
April 11, 2011

PROSPECTUS SUPPLEMENT
(To Prospectus dated June 14, 2010)

Filed pursuant to Rule 424(b)(5)
Registration No. 333-166750

1,688,782 Shares of Common Stock

Warrants to purchase up to 844,391 shares of Common Stock at an exercise price of $2.0725 per share

ADEONA PHARMACEUTICALS, INC.

Pursuant to this prospectus supplement and the accompanying prospectus, we are offering to investors 1,688,782 shares of our common stock ("Shares") together with warrants to purchase up to 844,391 additional shares of common stock (the "Warrants"). The common stock and warrants will be sold together as a unit with a per unit purchase price of $2.0725 consisting of one share of common stock and the equivalent of a warrant to purchase approximately 0.50 of a share of common stock. The exercise price of the warrants issued in the offering as part of such unit will be $2.0725 and have a term of exercise equal to 13 months from the first date of exercise, which is immediately following the closing date. The shares of common stock and warrants will be issued separately but can only be purchased together in this offering.

Our common stock is traded on the NYSE AMEX LLC under the symbol "AEN." On April 5, 2011, the last reported sale price for the common stock was $2.01 per share. You are urged to obtain current market quotations of the common stock.

Investing in our securities involves a high degree of risk. Before buying any securities, you should read the discussion of material risks of investing in our common stock under the heading "Risk factors" starting on page S-8 of this prospectus supplement.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus supplement or the accompanying prospectus. Any representation to the contrary is a criminal offense.

We have retained Chardan Capital Markets, LLC to act as our exclusive placement agent in connection with this offering. The placement agent has no obligation to buy any of the securities from us or to arrange for the purchase or sale of any specific number or dollar amount of securities but will use its best efforts to arrange for the sale of all of the units. We have agreed to pay the placement agent a cash fee of 6% of gross offering proceeds. See "Plan of Distribution" for more information regarding these arrangements.

	Per share(1)	Maximum Offering Amount (1)
Offering price	$ 2.0725	$ 3,500,000
Placement agent fees (maximum) (2)	$ 0.12435	$ 215,000
Proceeds, before expenses, to us (maximum) (3)	$ 1.94815	$ 3,285,000

(1)

We estimate the total expenses of this offering, excluding placement agent fees and expenses, will be approximately $35,000.

(2) We have agreed to pay the placement agent a cash fee representing 6% of the gross purchase price paid for the units at the closing in addition to $5,000 for legal expenses. The placement agent fees shown are the fees to be paid by us to the placement agent.

(3) The proceeds shown exclude proceeds that we may receive upon exercise of the Warrants.

The date of this prospectus is April 11, 2011.

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We are offering to sell, and seeking offers to buy, shares of our common stock and warrants only in jurisdictions where offers and sales are permitted. The distribution of this prospectus supplement and the offering of the common stock and warrants in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus supplement must inform themselves about, and observe any restrictions relating to, the offering of the common stock and warrants and the distribution of this prospectus supplement outside the United States. This prospectus supplement does not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, any securities offered by this prospectus supplement by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

This prospectus supplement is not complete without, and may not be utilized except in connection with, the accompanying prospectus dated June 14, 2010 and any amendments to such prospectus. This prospectus supplement provides supplemental information regarding us and updates certain information contained in the accompanying prospectus and describes the specific terms of this offering. The accompanying prospectus gives more general information, some of which may not apply to this offering. We incorporate important information into this prospectus supplement and the accompanying prospectus by reference.

ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is this prospectus supplement, which describes the terms of this offering and also adds to and updates information contained in the accompanying prospectus and the documents incorporated by reference into the accompanying prospectus. The second part is the accompanying prospectus, which gives more general information about the shares of our common stock and other securities we may offer from time to time under our shelf registration statement, some of which may not apply to the securities offered by this prospectus supplement. To the extent there is a conflict between the information contained in this prospectus supplement, on the one hand, and the information contained in the accompanying prospectus or any document incorporated by reference therein, on the other hand, the information in this prospectus supplement shall control.

We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference in the accompanying prospectus were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreement, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

You should rely only on the information contained or incorporated by reference in this prospectus supplement and contained or incorporated by reference in the accompanying prospectus. We have not authorized anyone, including the placement agent, and the placement agent has not authorized anyone, to provide you with different information. We are offering to sell, and seeking offers to buy, our securities only in jurisdictions where offers and sales are permitted. The information contained or incorporated by reference in this prospectus supplement and contained or incorporated by reference in the accompanying prospectus is accurate only as of the respective dates thereof, regardless of the time of delivery of this prospectus supplement and the accompanying prospectus, or of any sale of our securities offered hereby. It is important for you to read and consider all information contained in this prospectus supplement and the accompanying prospectus, including the documents incorporated by reference herein and therein, in making your investment decision. You should also read and consider the information in the documents we have referred you to in "Incorporation of Certain Documents by Reference" in this prospectus supplement and "Where You Can Find More Information" in the accompanying prospectus.

Unless otherwise indicated, "Adeona," the "Company," "we," "us," "our" and similar terms refer to Adeona Pharmaceutica Inc. and its subsidiaries.

This offering of common stock is being made under a registration statement on Form S-3 (Registration File no. 333-166750) that we filed with the Securities and Exchange Commission, or the SEC, as part of a "shelf" registration process and that the SEC declared effective on June 14, 2010. Under the shelf registration process, we may offer to sell shares of our common stock, $0.001 par value, and warrants to purchase shares of our common stock, and/or units consisting of two or more of any such securities from time to time in one or more offerings up to a total dollar amount of $15,000,000.

We are not making any representation to you regarding the legality of an investment in the common stock by you under applicable law. You should consult with your own advisors as to the legal, tax, business, financial and related aspect of a purchase of the common stock.

NOTE REGARDING FORWARD-LOOKING STATEMENTS

Certain matters in this prospectus supplement constitute “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. All statements, other than statements of historical facts, included in this prospectus supplement that address activities, events or developments that we expect or anticipate will or may occur in the future, including such matters as our projections, future capital expenditures, business strategy, competitive strengths, goals, expansion, market and industry developments and the growth of our businesses and operations, are forward-looking statements. These statements can be identified by introductory words such as "expects," “anticipates,” "plans," "intends," "believes," "will," "estimates," "projects" or words of similar meaning, and by the fact that they do not relate strictly to historical or current facts. Our forward-looking statements address, among other things:

a failure of our product candidates to be demonstrably safe and effective;

a failure to obtain regulatory approval for our products or to comply with ongoing regulatory requirements;

a lack of acceptance of our product candidates in the marketplace;

a failure by us to become or remain profitable;

an inability by us to obtain the capital necessary to fund our research and development activities; and

a loss of any of our key scientist or management personnel.

Additional factors that could affect future results are set forth below in this prospectus supplement under the caption Risk Factors. We caution investors that the forward-looking statements contained in this prospectus supplement must be interpreted and understood in light of conditions and circumstances that exist as of the date of this prospectus supplement. We expressly disclaim any obligation or undertaking to update or revise forward-looking statements made in this prospectus supplement to reflect any changes in management's expectations resulting from future events or changes in the conditions or circumstances upon which such expectations are based.

Each forward-looking statement should be read in context with, and in understanding of, the various other disclosures concerning our company and our business made elsewhere in this prospectus supplement and accompanying prospectus as well as our public filings with the SEC. You should not place undue reliance on any forward-looking statement as a prediction of actual results or developments. We are not obligated to update or revise any forward-looking statements contained in this prospectus supplement or any other filing to reflect new events or circumstances unless and to the extent required by applicable law.

SUMMARY

This summary highlights selected information appearing elsewhere or incorporated by reference in this prospectus supplement and the accompanying prospectus and may not contain all of the information that is important to you. This prospectus supplement and the accompanying prospectus include or incorporate by reference information about the shares we are offering as well as information regarding our business and detailed financial data. You should read this prospectus supplement and the accompanying prospectus in their entirety, including the information incorporated by reference.

ABOUT ADEONA PHARMACEUTICALS, INC.

In this prospectus supplement, “Adeona Pharmaceuticals,” “Adeona” “we,” “us,” and “our” refer to Adeona Pharmaceutica Inc., a Nevada corporation and each of its subsidiaries, considered as a single enterprise.

We are a pharmaceutical company developing innovative medicines for the treatment of serious central nervous system diseases. Our primary strategy is to license product candidates that have demonstrated a certain level of clinical efficacy and develop them to a stage that results in a significant commercial collaboration. Currently, we have the following product candidates in development: a prescription medical food for Alzheimer’s disease, and drugs for multiple sclerosis, fibromyalgia and age-related macular degeneration.

- Alzheimer’s disease and mild cognitive impairment: reaZin TM (zinc cysteine) is being developed as a prescription medical food for the dietary management of patients with Alzheimer’s disease and mild cognitive impairment. A randomized, double-blind, placebo-controlled clinical study is underway at 2 centers in the United States. Sixty patients were enrolled in the study, and we recently completed the treatment phase of this clinical study. It is anticipated that top-line clinical study results should be presented on April 14, 2011 at the 63 rd Annual Meeting of the American Academy of Neurology.
- Multiple sclerosis: Trimesta (oral estriol) is a drug candidate being developed for the treatment of relapsing-remitting multiple sclerosis in women. A randomized, double-blind, placebo-controlled clinical trial is currently underway at 15 centers in the United States. As of March 1, 2011 127 out of 150 patients have been

enrolled.

- Fibromyalgia: Effirma TM (oral flupirtine) is a drug candidate being developed for the treatment of fibromyalgia. On May 6, 2010, we and Pipex Therapeutics, Inc. (Pipex), our wholly owned subsidiary, entered into a sublicense agreement with Meda AB, a multi-billion dollar international pharmaceutical company, covering all of our patents' rights on the use of oral flupirtine for fibromyalgia.
- Age-related macular degeneration: ZincMonoCysteine (zinc-monocysteine) is a drug candidate being developed for the treatment of age-related macular degeneration. An 80-patient, randomized, double-blind, placebo-controlled clinical trial has been completed.

Our secondary strategy is to market our core competency in measuring metabolic serum zinc and copper levels. To further this effort, we purchased HartLab, LLC, on July 13, 2009. Renamed Adeona Clinical Laboratory, the wholly owned CLIA-certified clinical testing facility provides a broad array of chemistry and microbiology diagnostic tests in the Greater Chicago area. At Adeona Clinical Laboratory, we developed and offer the CopperProof TM panel, a series of diagnostic tests for accurately measuring the metabolic serum zinc and copper status of patients with Alzheimer's disease and mild cognitive impairment. Adeona Clinical Laboratory is a licensed Medicare and Medicaid provider of clinical testing services.

Effective as of June 30, 2010, we emerged from a "Development-Stage Entity" as defined by FASB ASC 915-10. On May 6, 2010, we entered into a sublicense agreement with Meda AB of Sweden. This agreement provides that Meda AB will assume all future development costs for the commercialization of oral flupirtine for fibromyalgia. As consideration for such sublicense, we received an up-front payment of $2.5 million and are entitled to milestone payments of $5 million upon filing of an NDA with the FDA of oral flupirtine for fibromyalgia and $10 million upon marketing approval, plus royalties. We consider the agreement with Meda AB to be an indication that we have commenced our principal operations and therefore are not required to report as a development-stage entity.

Our source of liquidity as of December 31, 2010, is cash of $2,648,853. Our projected uses of cash include cash used to fund further clinical development of our drug and medical food candidates, working capital and other general corporate activities. We may also use our cash for the acquisition of businesses, technologies and products that will complement our existing assets.

On January 28, 2011, we entered into a Securities Purchase Agreement with institutional investors, relating to the offering and sale of 2,857,144 shares of common stock, par value $0.001 per share and warrants to purchase 1,428,572 shares of common stock. We raised gross proceeds of $4,000,000, before estimated offering expenses of approximately $300,000, which includes placement agent fees. The offering was made pursuant to the Company's shelf registration statement on Form S-3 (File No. 333-166750), which was declared effective by the Securities and Exchange Commission (SEC) on June 14, 2010.

On April 6, 2011, we entered into a Securities Purchase Agreement with institutional investors, relating to the offering and sale of 1,688,782 shares of common stock, par value $0.001 per share and warrants to purchase 844,391 shares of common stock. We raised gross proceeds of $3,500,000, before estimated offering expenses of approximately $250,000, which includes placement agent fees. The offering was made pursuant to the Company's shelf registration statement on Form S-3 (File No. 333-166750), which was declared effective by the Securities and Exchange Commission (SEC) on June 14, 2010.

We believe that with the additional proceeds of the January and April 2011 equity financings, our cash will be sufficient to fund our planned operations for at least the next 12 months. We will need additional capital to continue the development of our product candidates and clinical programs beyond 12 months. The sale of any equity or debt securities may result in additional dilution to our stockholders, and we cannot be certain that additional financing will be available in amounts or on terms acceptable to us, if at all. If we are unable to obtain financing, we may be required to reduce the scope and timing of the planned clinical and preclinical programs, which could harm our financial condition and operating results.

Clinical Development Programs

Alzheimer's Disease and Mild Cognitive Impairment
reaZin (zinc cysteine)

Disease

Alzheimer's is a progressive neurodegenerative disease in which affected nerve cells in the brain die, making it increasingly difficult for the brain's memory and learning areas to function properly. A person with Alzheimer's disease has problems with memory, judgment and thinking, making it hard for the person to work or take part in normal day-to-day activities. The death of the nerve cells occurs gradually over a period of years. According to the Alzheimer's Association, it is estimated that today over 5 million Americans have Alzheimer's disease and that America spends $183 billion caring for people with Alzheimer's and other dementias. Dysfunction of proper zinc and copper handling in the brain is implicated in Alzheimer's disease.

Clinical Development

Our first product candidate is reaZin (zinc cysteine) (formerly named Zinthionein) for the dietary management of Alzheimer’s disease and mild cognitive impairment. It is being developed as a prescription medical food. reaZin is a proprietary, once-daily, gastroretentive, sustained-release, oral tablet formulation of zinc and cysteine. All constituents included in reaZin are believed to have Generally Regarded as Safe (GRAS) status according to Food and Drug Administration (FDA) standards. reaZin was invented and developed by us to achieve the convenience of once-daily dosing, high bioavailability (the quantity or fraction of the ingested dose that is absorbed) and to minimize gastrointestinal side effects of oral zinc therapy.

Our CopperProof-2 clinical trial is a controlled, randomized, double-blind, placebo-controlled clinical study evaluating reaZin. The study was divided into two parts. Part 1 was a 13-patient, three-arm, single-dose, comparator study in Alzheimer's disease and mild cognitive impairment patients that compared the tolerability and bioavailability of oral reaZin to Galzin®(the only FDA-approved zinc preparation) and placebo. Results from Part 1 of the study demonstrated a superior serum zinc bioavailability and a substantially lower incidence of adverse effects in Alzheimer's disease and mild cognitive impairment patients in favor of reaZin compared to Galzin®.

Part 2 of the CopperProof-2 study, underway at 2 centers in the United States, enrolled 60 Alzheimer's disease and mild cognitive impairment patients and randomized them to receive either once-daily oral reaZin or matching placebo for six months. Primary assessments of patients included 3 and 6 month serum parameters of zinc and copper, and secondary assessments including changes in cognitive function using standard clinical measures used for Alzheimer's disease and mild cognitive impairment patients. We recently completed the treatment phase of this clinical study. It is anticipated that top-line clinical study results should be presented on April 14, 2011 at the 63 rd Annual Meeting of the American Academy of Neurology.

In November 2010, we were awarded a grant in the amount of $244,480 under the Qualifying Therapeutic Discovery Project Program to support our Alzheimer’s disease program currently in clinical testing.

Relapsing-Remitting Multiple Sclerosis in Women
Trimesta (oral estriol)

Disease

Multiple sclerosis is a progressive neurological disease in which the body loses the ability to transmit messages along central nervous system nerve cells, leading to a loss of muscle control, paralysis, cognitive impairment and in some cases death. According to the National Multiple Sclerosis Society, currently, more than 2.5 million people worldwide (approximately 400,000 patients in the United States) have been diagnosed with multiple sclerosis. Mainly young adults, ages 20 to 50, and two to three times as many women than men are diagnosed with multiple sclerosis. According to the National Multiple Sclerosis Society, approximately 85% of multiple sclerosis patients are initially diagnosed with the relapsing-remitting form, compared to 10-15% with other progressive forms. Despite the availability of 8 FDA-approved therapies for the treatment of relapsing-remitting multiple sclerosis, the disease is highly underserved and exacts a heavy economic toll. Multiple sclerosis costs the United States more than $10.6 billion annually in medical care and lost productivity according to the Society for Neuroscience.

Background

It has been scientifically demonstrated that pregnant women with certain autoimmune diseases experience a spontaneous reduction of disease symptoms during pregnancy, especially in the third trimester. The PRIMS study (Pregnancy In Multiple Sclerosis), a landmark clinical study published in the New England Journal of Medicine, followed 254 women with multiple sclerosis during 269 pregnancies and for up to one year after delivery. The PRIMS study demonstrated that relapse rates were significantly reduced by 71 percent ($p < 0.001$) through the third trimester of pregnancy compared to pre-pregnancy-rates, and that relapse rates increased by 120 percent ($p < 0.001$) during the first three months after birth (post-partum) before returning to pre-pregnancy rates. It has been hypothesized that the female hormone, estriol, plays a role in so-called “fetal immune privilege”, a process that prevents a mother’s immune system from attacking and rejecting her fetus. The autoimmune benefits of pregnancy may be partially attributable to estriol, the effects of which may also be partially responsible for the favorable effects on multiple sclerosis during pregnancy. Maternal levels of estriol increase in a linear fashion through the third trimester of pregnancy until birth, whereupon they abruptly return to low circulating levels.

Rhonda Voskuhl, M.D., Director, University of California Los Angeles (UCLA) multiple sclerosis program, UCLA Department of Neurology, has found that pregnancy levels of estriol, a hormone that is produced by the placenta during pregnancy, has potent immunomodulatory effects and that estriol may have therapeutic benefit to non-pregnant female multiple sclerosis patients by, in effect, mimicking the spontaneous reduction in relapse rates seen in multiple sclerosis patients during pregnancy.

Estriol has been approved and marketed for over 40 years throughout Europe and Asia for the treatment of post-menopausal hot flashes. It has never been approved by the FDA for any indication in the United States.

Clinical Development

Our second product candidate is Trimesta (oral estriol) for the treatment of relapsing-remitting multiple sclerosis. An investigator-initiated, 10-patient, 22-month, single-agent, crossover clinical trial was completed in the United States to study the therapeutic effects of 8 mg of oral Trimesta taken daily in nonpregnant female relapsing remitting multiple sclerosis patients. The total volume and number of gadolinium-enhancing lesions was measured by brain magnetic resonance imaging (an established neuroimaging measurement of disease activity in multiple sclerosis) and showed a statistically significant decrease, both in lesion volumes and the number of lesions, during Trimesta treatment compared to baseline and while on drug holiday. During this clinical trial, a statistically significant14% improvement from baseline in Paced Auditory Serial Addition Test (PASAT) cognitive testing scores ($p = 0.04$) was also observed in the multiple sclerosis patients after six months of therapy. PASAT is a routine cognitive test performed in patients with a wide variety of neuropsychological disorders such as multiple sclerosis.

A randomized, double-blind, placebo-controlled clinical trial is currently underway at 15 centers in the United States. The purpose of this clinical trial is to study whether 8 mg of oral Trimesta taken daily over a 2 year period will reduce the rate of relapses in a large population of female patients with relapsing-remitting multiple sclerosis. Investigators are administering either Trimesta along with glatimer acetate (Copaxone®) injections, an FDA-approved therapy for multiple sclerosis, or a placebo plus glatimer acetate injections to women between the ages of 18 to 50 who have been recently diagnosed with relapsing-remitting multiple sclerosis. The primary endpoint is relapse rates at two years with an interim analysis one year following full enrollment using standard clinical measures of multiple sclerosis disability. As of March 1, 2011, 127 out of 150 patients have been enrolled in this clinical trial. Tentatively, we anticipate full enrollment by the second half of 2011; however, no assurances can be given that such study enrollment will be completed in such time period.

The preclinical and clinical development of Trimesta has been primarily financed by a $5 million grant from the National Multiple Sclerosis Society (NMSS) in partnership with the NMSS's Southern California chapter, with support from the National Institutes of Health. In January of 2010, it was announced that an additional $860,440 in grant funding had been received through the American Recovery and Reinvestment Act allowing the number of clinical sites currently enrolling patients in the clinical study to increase from 7 clinical sites to 15. In November of 2010, we were awarded a grant in the amount of $244,480 under the Qualifying Therapeutic Discovery Project Program to support our multiple sclerosis program currently in clinical testing. In March of 2011, the Trimesta clinical trial was awarded an additional $409,426 in grant funding from the NMSS.

Fibromyalgia
Effirma (oral flurpirtine)

Disease

Fibromyalgia is a chronic and debilitating condition characterized by widespread pain and stiffness throughout the body, accompanied by severe fatigue, insomnia and mood symptoms. Fibromyalgia affects an estimated 2-4% of the population worldwide, including an estimated 4 million patients in the United States. There are presently three products approved for this indication in the United States – Lyrica®, Cymbalta® and Savella®. Flupirtine is differentiated from these products in that it employs a unique mode of action. Meda AB of Sweden estimates the United States market for fibromyalgia to be near $1 billion at the time of potential launch of oral flupirtine.

Clinical Development

Our third product candidate is Effirma (oral flupirtine) for the treatment of fibromyalgia. Effirma is a selective neuronal potassium channel opener that also has NMDA receptor antagonist properties. Effirma is a non-opioid, non-NSAID, non-steroidal, analgesic. Preclinical data and clinical experience suggest that Effirma should also be effective for neuropathic pain since it acts in the central nervous system via a mechanism of action distinguishable from most marketed analgesics. Effirma is especially attractive because it operates through non-opiate pain pathways, exhibits no known abuse potential, and lacks withdrawal effects. In addition, no tolerance to its antinocioceptive effects has been observed. One common link between neuroprotection, nocioception and Effirma may be the N-methyl-D-aspartic acid glutamate system, a major receptor subtype for the excitotoxic neurotransmitter, glutamate. Effirma has strong inhibitory actions on N-methyl-D-aspartic acid-mediated neurotransmission. Flupirtine was originally developed by Asta Medica(subsequently acquired by Meda AB) and has been approved and is marketed by Meda AB in Europe since 1984, as well as other countries, for the treatment of pain, although it has never been approved by the FDA for any indication.

Corporate Partnership

On May 6, 2010, we and Pipex, our wholly owned subsidiary, entered into a sublicense agreement with Meda AB, a multi-billion dollar international pharmaceutical company, pursuant to which Meda AB will assume all future development costs and may commericialize oral flupirtine for fibromyalgia in the U.S. As consideration for such sublicense, we received an up-front payment of $2.5 million and are entitled to milestone payments of $5 million upon filing of a New Drug Application (NDA) with the FDA for oral flupirtine for fibromyalgia and $10 million upon FDA approval of such NDA. Pursuant to the sublicense agreement, we will also receive a 7% royalty on sales of oral flupirtine for fibromyalgia in the United States, Canada and Japan, with such royalties being shared equally with our licensor, McLean Hospital, a Harvard hospital.

Flupirtine is approved and marketed by Meda AB and its distributors in Europe and other countries for indications other than fibromyalgia and has been prescribed to millions of patients worldwide. We believe that such substantial human experience of flupirtine should greatly assist the U.S. FDA in its evaluation of the safety of flupirtine upon review of an NDA of flupirtine for fibromyalgia.

Age-Related Macular Degeneration
ZincMonoCysteine (zinc-monocysteine)

Disease

Age-related macular degeneration affects over 10 million Americans and is the leading cause of severe vision loss in people over age 55. It occurs when the small central portion of the retina, known as the macula, deteriorates. The retina is the light-sensing central nervous system tissue at the back of the eye. Although it rarely causes complete blindness, age-related macular degeneration can be a source of significant vision loss.

Clinical Development

Our fourth product candidate is ZincMonoCysteine (zinc-monocysteine) for the treatment of age-related macular degeneration. ZincMonoCysteine is an oral complex of zinc and the amino acid cysteine that we believe may have improved therapeutic properties compared to currently marketed zinc-based nutritional products. ZincMonoCysteine was invented and developed by the late David A. Newsome, M.D., former Chief of the Retinal Disease Section of the National Eye Institute and our former Senior Vice President of Research and Development. The late Dr. Newsome was the first to pioneer and demonstrate the benefits of oral zinc therapy in age-related macular degeneration. Oral zinc-containing nutritional products now represent the standard of care for the chronic treatment of age-related macular degeneration and have annual world-wide sales of approximately $300 million according to IMS Health.

ZincMonoCysteine has completed an 80-patient, randomized, double-blind, placebo-controlled, Investigational Review Board (IRB) approved clinical trial conducted by the late Dr. Newsome in dry age-related macular degeneration and demonstrated highly statistically significant improvements in central retinal function. These results were published in a peer-reviewed journal in 2008. Currently, we are conducting further preclinical and manufacturing activities on ZincMonoCysteine and planning the clinical development strategy. No assurance can be given that we will successfully complete these pre-clinical and manufacturing activities.

Intellectual Property

Our goal is to (a) obtain, maintain, and enforce patent protection for our products, formulations, processes, methods, and other proprietary technologies, (b) preserve our trade secrets, and (c) operate without infringing on the proprietary rights of other parties, worldwide. We seek, where appropriate, the broadest intellectual property protection for product candidates, proprietary information, and proprietary technology through a combination of contractual arrangements and patents. Below is a description of our license and development agreements relating to our product candidates:

Mclean Hospital Exclusive License Agreement and Meda AB Sub-License Agreement

In 2005, as amended in 2007 and 2010, Pipex, our wholly owned subsidiary, entered into an exclusive license agreement with the McLean Hospital, a Harvard University teaching hospital, relating to U.S. Patent No. 6,610,324 and its foreign equivalents, entitled “Flupirtine in the treatment of fibromyalgia and related conditions.” Pursuant to this agreement, Pipex paid an upfront fee of $20,000 and back patent costs of approximately $41,830 and agreed to pay McLean royalties on net sales of oral flupirtine equal to 3.5% of net sales of oral flupirtine for indications covered by

the issued patents, reduced to 1.75% if Pipex has a license to other intellectual property covering those indications. In addition, Pipex agreed to use its best efforts to commercialize oral flupirtine for the therapeutic uses embodied in the patent applications. Furthermore, Pipex agreed to reimburse McLean Hospital all future patent costs and pay the following milestone payments: $150,000 upon the initiation of a pivotal Phase III clinical trial of oral flupirtine; $300,000 upon the filing of an NDA for oral flupirtine; and $600,000 upon FDA approval of oral flupirtine. The due diligence requirements of the exclusive license agreement were amended in April of 2010 and further amended by a Non-Disturbance Agreement that was signed with Pipex, McLean Hospital and Meda. The agreement remains in effect until the later of (i) the date all issued patents and filed patent applications within the Patent Rights (as defined in the agreement) expire or are abandoned and (ii) one year after the last Commercial Sale (as defined in the agreement) for which royalty is due or ten years after expiration or abandonment date set forth in clause (i) above, whichever is earlier. Pipex has the right to terminate the agreement at any time upon 90 days notice. In addition, Mclean may terminate the agreement (i) upon 10 days notice for nonpayment unless payment is made within such 10 days, (ii) immediately upon written notice if Pipex fails to maintain required insurance or become insolvent, make an assignment for the benefit of creditors or petition for bankruptcy is filed for or against Pipex or (ii) if Pipex, its affiliates or its sublicensees default in performance of their obligations under the agreement and such default is not cured within 60 days.

Effective May 6, 2010, we and Pipex, our wholly owned subsidiary, entered into a Sublicense Agreement with Meda AB of Sweden. Pursuant to this agreement, Meda has been granted an exclusive sublicense to all of Pipex's patents covering the use of oral flupirtine for fibromyalgia. These patents have been issued in the U.S. and are pending in Canada and Japan (the "Territory"). This agreement provides that Meda will assume all future development costs for the commercialization of oral flupirtine for fibromyalgia. As consideration for this sublicense, Pipex received an up-front payment of $2.5 million upon execution of this agreement and is entitled to milestone payments of $5 million upon filing of an NDA with the FDA for oral flupirtine for fibromyalgia and $10 million upon marketing approval.. This agreement also provides that Pipex is entitled to receive royalties of 7% of net sales of oral flupirtine approved for the treatment of fibromyalgia covered by issued patent claims in the Territory. Pursuant to the terms of Pipex's agreement with our university licensor, Pipex is obligated to share half of the royalties it receives with the university licensor, McLean Hospital, and Pipex is obligated to pay them $375,000 upon receipt of an upfront payment, which it did pay in May 2010 when it received the payment from Meda. The agreement continues in effect country by country until the earlier of the expiration of the Royalty Period (as defined in the agreement) or the termination of the Mclean license. Meda has the right to terminate the agreement at any time upon 90 days notice. In addition, a party may terminate the agreement upon 30 days notice if the other party breached material obligations and such breach is not cured within a period of time set forth in the agreement. The parties also have the right to terminate the agreement upon 60 days notice in the event of the filing by a party of a bankruptcy petition, the filing of an involuntary petition not dismissed within 60 days, a party proposes a written agreement of composition or extension of its debt, a party becomes Insolvent (as defined in the agreement), liquidates, dissolves, ceases to conduct business or makes an assignment for the benefit of creditors. Upon a termination, all licenses revert to Pipex.

The Regents of University of California License Agreement

In July 2005, we were granted an exclusive worldwide license agreement with the Regents of the University of California(Regents) relating to issued U.S. Patent No. 6,936,599 and pending patent applications covering the uses of the drug candidate Trimesta (oral esteriol). Pursuant to this agreement, we paid an upfront license fee of $20,000, reimbursed patent expenses of $41,000 and agreed to pay a license fee of $25,000 during 2006. We also agreed to pay annual maintenance fees, milestone payments totaling $750,000 that are payable on filing an NDA, and on approval of an NDA with the FDA, as well as royalties on net sales of Trimesta covered by the licensed patents. We may be permitted to partially pay milestone payments in the form of equity. The duration of this agreement is from the effective date of July 11, 2005 until the last-to-expire patent in Regent's Patent Rights, or until the last patent application licensed under this agreement is abandoned and no patent in Regent's Patent Rights ever issues. We have the right to terminate this agreement at any time and termination will be effective 90 days after the effective date of the termination notice. The Regents may terminate the agreement with a written notice of default if we violate or fail to perform any material term or covenant of this agreement. However, we have 60 days after the effective date of the notice of default to repair the default.

THE OFFERING

Securities we are offering	1,688,782 shares of common stock Warrants to purchase up to 844,391 shares of common stock at an exercise price of $2.0725 per share
Common stock to be outstanding after this offering	28,068,511 shares
Placement Agent Fees	At the closing, we will pay the placement agent 6% of the gross proceeds of the offering as compensation for its services in connection with this offering and an additional $5,000 of its legal expenses.
Use of proceeds	Working capital and/or general corporate purposes.
American Stock Exchange Symbol	AEN
Risk Factors	This investment involves a high degree of risk. See “Risk Factors” and other information included or incorporated into this prospectus supplement and the accompanying prospectus for a discussion of the factors you should carefully consider before deciding to invest in our securities.

The number of shares of common stock shown above to be outstanding after this offering is based on the 26,379,729 shares outstanding as of April 5, 2011 and assumes the sale of all shares. Unless otherwise indicated, the number of shares of common stock presented in this prospectus supplement excludes: (i) 2,813,593 shares of our common stock that, as of the date of this prospectus supplement, are issuable upon the exercise of outstanding options under our stock plans; (ii) 2,559,650 shares of our common stock that, as of the date of this prospectus supplement, are issuable upon the exercise of outstanding warrants other than those covered by this prospectus supplement; and (iii) 844,391 shares of our common stock that may be issuable upon exercise of the warrants covered by this prospectus supplement.

Unless otherwise indicated, this prospectus supplement assumes the sale of the maximum number of common shares offered hereunder.

RISK FACTORS

Investing in our common stock involves a high degree of risk. In addition to the risks related to our business set forth in this prospectus supplement, the accompanying prospectus and the other information included and incorporated by reference in this prospectus supplement and accompanying prospectus, you should carefully consider the risks described below before purchasing our common stock. Additional risks, uncertainties and other factors not presently known to us or that we currently deem immaterial may also impair our business operations.

We currently have very minimal revenues and will need to raise additional capital to operate our business.

With the exception of the quarter ended June 30, 2010, we have experienced significant losses since inception and have a significant accumulated deficit. We expect to incur additional operating losses in the future and therefore our cumulative losses to increase. To date, other than the licensing fee we received from Meda AB for the development of

and commercialization of Effirma (oral flupirtine) for fibromyalgia and laboratory revenues from Adeona Clinical Laboratory, we have generated very minimal revenues. As of December 31, 2010, our accumulated deficit totaled approximately $43.7 million on a consolidated basis. Until such time as we receive approval from the FDA and other regulatory authorities for our product candidates, we will not be permitted to sell our drugs or prescription medical food and therefore will not have product revenues. For the foreseeable future we will have to fund all of our operations and capital expenditures from equity and debt offerings, cash on hand, licensing fees, and grants. If the upfront licensing fee we received is not sufficient to sustain our operations, we will need to seek additional sources of financing and such additional financing may not be available on favorable terms, if at all. If we do not succeed in raising additional funds on acceptable terms, we may be unable to complete planned preclinical and clinical trials or obtain approval of our product candidates from the FDA and other regulatory authorities. In addition, we could be forced to discontinue product development, forego sales and marketing efforts, and forego licensing in attractive business opportunities. Any additional sources of financing will likely involve the issuance of our equity or debt securities, which will have a dilutive effect on our stockholders.

We have not been able to sustain profitability.

Other than with respect to the quarter ended June 30, 2010, we have a history of losses and we had incurred and continue to incur substantial losses and negative operating cash flow. Even if we succeed in developing and commercializing one or more of our product candidates, we may still incur substantial losses for the foreseeable future and may not sustain profitability. We also expect to continue to incur significant operating and capital expenditures and anticipate that our expenses will substantially increase in the foreseeable future as we do the following:

- continue to undertake preclinical development and clinical trials for our product candidates;
- seek regulatory approvals for our product candidates;
- implement additional internal systems and infrastructure;
- lease additional or alternative office facilities; and
- hire additional personnel, including members of our management team.

We may experience negative cash flow for the foreseeable future as we fund our technology development with capital expenditures. As a result, we will need to generate significant revenues in order to achieve and maintain profitability. We may not be able to generate these revenues or achieve profitability in the future. Our failure to achieve or maintain profitability could negatively impact the value of our common stock and underlying securities.

We have a limited operating history on which investors can base an investment decision.

We have not yet demonstrated our ability to perform the functions necessary for the successful commercialization of any of our product candidates. The successful commercialization of our product candidates will require us to perform a variety of functions, including:

- continuing to undertake preclinical development and clinical trials;
- participating in regulatory approval processes;
- formulating and manufacturing products; and
- conducting sales and marketing activities.

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

We have limited experience in commercializing therapeutic and diagnostic products and therefore we may not be effective in developing and commercializing products.

Many of our technologies, particularly our copper and zinc therapeutic and diagnostic products, are at an early stage of commercialization. We continue to develop and commercialize new diagnostic products and create new applications for our products through our Adeona Clinical Laboratory subsidiary. We have limited or no experience in these applications as well as operating in these markets. You should evaluate us in the context of the uncertainties and complexities affecting an early stage company developing products and applications for the life science industries and experiencing the challenges associated with entering into new markets that are highly competitive. We need to make significant investments to ensure our diagnostic and therapeutic products and applications perform properly and are cost-effective and can be reimbursed by Medicare and other healthcare insurers. There is no assurance that either of these events will occur. Even if we develop products for commercial use, we may not be able to develop products that are accepted in the Alzheimer’s disease or other markets that include patients with neurodegenerative diseases.

We have no experience in marketing a prescription medical food such as reaZin, nor can we provide any assurance that the results of our on-going CopperProof-2 trial will be successful, or even if successful, demonstrate sufficient clinical benefit to permit us to obtain reimbursement from health insurance payers nor permit us to profitably market such prescription medical food with or without health insurance reimbursement.

We may not generate additional revenue from our relationships with our corporate collaborators.

On May 6, 2010 we and Pipex, our wholly owned subsidiary, entered into a sublicense agreement with Meda AB whereby we may receive milestone payments totaling $17.5 million (including an upfront payment of $2.5 million that has already been received), plus royalties on our oral flupirtine program. There can be no assurance that Meda AB will successfully develop oral flupirtine for fibromyalgia that would allow us to receive such additional $15 million in milestone payments and royalties on sales in connection with such agreement. The successful achievement of the various milestones set forth in the agreement is not within our control and we will be dependent upon Meda AB for achievement of such milestones.

We may not be able to generate any significant revenue from copper and zinc status tests or any other tests we may develop.

We have committed significant research and development resources to the development of copper and zinc status tests. Although there may be a large potential market for such testing, there is no guarantee that we will successfully generate significant revenues from this or any other tests for any use. In November 2009, we launched a copper and zinc status test panel through Adeona Clinical Laboratory, our CLIA-certified reference laboratory.

However, sales of our zinc and copper status test panel has generated only very limited revenue and there is no guarantee that we will be able to successfully market this test panel or other diagnostic tests. If we are not able to successfully market or sell our diagnostic tests we may develop for any reason, we will not generate any revenue from the sale of such tests. Even if we are able to develop diagnostic or other tests for sale in the marketplace, a number of factors could impact our ability to generate any significant revenue from the sale of such tests, including the following:

- reliance on our Adeona Clinical Laboratory operations, which are subject to routine governmental oversight and inspections for continued operation pursuant to CLIA and other regulations;
- our ability to establish and maintain adequate infrastructure to support the commercial launch and sale of our diagnostic tests through our Adeona Clinical Laboratory subsidiary, including establishing adequate laboratory space, information technology infrastructure, sample collection and tracking systems and electronic ordering and reporting systems and other infrastructure and hiring adequate laboratory and other personnel;
- the availability of adequate study samples for validation studies for any diagnostic tests we develop, the success of such validation studies and our ability to publish study results in peer-reviewed journals;
- the availability of alternative and competing tests or products and technological innovations or other advances in medicine that cause our technologies to be less competitive;
- compliance with federal, state and foreign regulations governing laboratory testing and the sale and marketing of diagnostic or other tests, including copper and zinc; status tests;
- the accuracy rates of such tests, including rates of false-negatives and/or false-positives;
- concerns regarding the safety effectiveness or clinical utility of our tests;
- changes in the regulatory environment affecting health care and health care providers, including changes in laws regulating laboratory testing and/or device manufacturers and any laws regulating diagnostic testing;
- the extent and success of our sales and marketing efforts and ability to drive adoption of our diagnostic tests;
- coverage and reimbursement levels by government payers and private insurers;
- the level of physician and customer adoption of any diagnostic tests we develop;
- pricing pressures and changes in third-party payer reimbursement policies;
- general changes or developments in the market for Alzheimer's disease diagnostics or diagnostics in general;
- ethical and legal issues concerning the appropriate use of the information resulting from Alzheimer's disease diagnostic tests or other tests;
- our ability to promote and protect our products and technology; and
- intellectual property rights held by others or others infringing our intellectual property rights.

We have experienced several management changes.

We have had significant changes in management in the past two years. Effective July 1, 2008, Nicholas Stergis was appointed our Chief Executive Officer; however, effective March 29, 2009, Mr. Stergis resigned his position, but remained a director of the Company until August 20, 2009. The Board then appointed Steve H. Kanzer as our interim Chief Executive Officer and President. Effective June 26, 2009, Max Lyon was appointed our Chief Executive Officer and President, while Mr. Kanzer remained as Chairman of the Board of the Company. Effective February 6, 2010, James S. Kuo, M.D., M.B.A., was appointed our Chairman of the Board, Chief Executive Officer and President and

Mr. Lyon resigned from his position as Chief Executive Officer, President and director. Changes in key positions in our Company, as well as additions of new personnel and departures of existing personnel, can be disruptive, might lead to additional departures of existing personnel and could have a material adverse effect on our business, operating results, financial results and internal controls over financial reporting.

We only acquired our CLIA-certified reference laboratory in July of 2009 and have limited experience operating a diagnostic and microbiology testing laboratory. Our ability to successfully develop and commercialize diagnostic and microbiology tests will depend on our ability to successfully operate our CLIA-certified reference laboratory and obtain and maintain required regulatory certifications.

We acquired Adeona Clinical Laboratory, our CLIA-licensed clinical reference laboratory located in Bolingbrook, IL, in July of 2009. Because there is substantial distance between Adeona Clinical Laboratory and our corporate headquarters in Ann Arbor, Michigan, we may have logistical and operational challenges in effectively managing and operating Adeona Clinical Laboratory. In November of 2009, we launched a panel of copper and zinc status tests through Adeona Clinical Laboratory. If we are unable to successfully commercialize our serum based copper and zinc diagnostic test panels through Adeona Clinical Laboratory, we may not be able to achieve significant revenues and profitability with respect to such activities. Our ability to successfully develop and commercialize diagnostic tests and microbiology testing will depend on our ability to successfully operate Adeona Clinical Laboratory and obtain and maintain required regulatory approvals.

As a clinical reference laboratory, Adeona Clinical Laboratory is subject to CLIA regulations, which are designed to ensure the quality and reliability of clinical laboratories by mandating specific standards in the areas of personnel qualifications, administration and participation in proficiency testing, patient test management, quality control, quality assurance and inspections. The sanction for failure to comply with CLIA requirements may be suspension, revocation or limitation of a laboratory's CLIA certificate, which is necessary to conduct business, as well as significant fines and/or criminal penalties. Adeona Clinical Laboratory is also subject to regulation of laboratory operations under state clinical laboratory laws. State clinical laboratory laws may require that laboratories and/or laboratory personnel meet certain qualifications, specify certain quality controls or require maintenance of certain records. Certain states, including Maryland, New York, Pennsylvania and Rhode Island, each require that you obtain licenses to test specimens from patients residing in those states and additional states may require similar licenses in the future. If we are unable to obtain licenses from these states or there is delay in obtaining such licenses, we will not be able to process any samples from patients located in those states until we have obtained the requisite licenses. Potential sanctions for violation of these statutes and regulations include significant fines and the suspension or loss of various licenses, certificates and authorizations, which could adversely affect our business and results of operations.

We may not obtain the necessary United States or worldwide regulatory approvals to commercialize our product candidate(s).

We will need FDA approval to commercialize some of our product candidates in the United States and approvals from equivalent regulatory authorities in foreign jurisdictions to commercialize our product candidates in those jurisdictions. In order to obtain FDA approval for any of our product candidates, we must submit to the FDA an NDA, demonstrating that the product candidate is safe for humans and effective for its intended use and that the product candidate can be consistently manufactured and is stable. This demonstration requires significant research and animal tests, which are referred to as "preclinical studies," human tests, which are referred to as "clinical trials" as well as the ability to manufacture the product candidate, referred to as "chemistry manufacturing control" or "CMC." We will also need to file additional investigative new drug applications and protocols in order to initiate clinical testing of our drug candidates in new therapeutic indications and delays in obtaining required FDA and institutional review board approvals to commence such studies may delay our initiation of such planned additional studies.

Satisfying the FDA's regulatory requirements typically takes many years, depending on the type, complexity, and novelty of the product candidate, and requires substantial resources for research development, and testing. We cannot predict whether our research and clinical approaches will result in drugs that the FDA considers safe for humans and effective for indicated uses. The FDA has substantial discretion in the drug approval process and may require us to conduct additional preclinical and clinical testing or to perform post-marketing studies.

The approval process may also be delayed by changes in government regulation, future legislation or administrative action, or changes in FDA policy that occur prior to or during our regulatory review. Delays in obtaining regulatory approvals may do the following:

- delay commercialization of, and our ability to derive product revenues from, our product candidates;
- impose costly procedures on us; and
- diminish any competitive advantages that we may otherwise enjoy.

The on-going and future development and commercialization of Effirma (oral flupirtine) for fibromyalgia is the responsibility of Meda AB and no assurance can be given that Meda will gain FDA approval of oral flupirtine for fibromyalgia.

Even if we comply with all FDA requests, the FDA may ultimately reject one or more of our NDAs. We cannot be sure that we will ever obtain regulatory clearance for our product candidates. Failure to obtain FDA approval of any of our product candidates will severely undermine our business by reducing our number of salable products and, therefore, corresponding product revenues.

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

Our diagnostic and microbiology tests are subject to changes in CLIA, FDA and other regulatory requirements.

We initially plan to develop assays and commercialize our tests in the form of laboratory developed tests (LDTs) through Adeona Clinical Laboratory, our CLIA-certified laboratory. Although LDT testing is currently solely under the purview of CMS and state agencies who provide oversight of the safe and effective use of LDTs, the FDA and the United States Department of Health and Human Services have been reviewing their approach to regulation in the area of LDTs, and the laws and regulations may undergo change in the near future. Although we have no current plans in our LDT strategy to utilize analyte specific reagents (ASRs) or In Vitro Diagnostic Multivariate Index Assay (IVDMIAs), which have been the focus of recent reforms and enforcement actions by the FDA, we cannot predict the extent of the FDA's future regulation and policies with respect to LDTs. Concurrently with our LDT commercialization activities, we may conduct the development, validation, and other activities necessary to file submissions with the FDA seeking approval for selected diagnostic tests. If we are unable to successfully launch any diagnostic tests as LDTs or if we are otherwise required to obtain FDA premarket clearance or approval prior to commercializing any diagnostic tests or maintain Adeona Clinical Laboratory's CLIA-certified laboratory status, our ability to generate revenue from the sale of such tests may be delayed and we may never be able to generate significant revenues from sales of diagnostic products.

If the medical relevance of copper and zinc in Alzheimer's disease is not demonstrated or is not recognized by others, we may have less demand for our products and services and may have less opportunity to enter into diagnostic product development and commercialization collaborations with others.

Some of the products we have developed and additional products that we hope to develop involve new and unproven approaches or involve applications in markets that we are only beginning to explore. They are based on the assumption that information about the roles of copper and zinc in the progression and development of neurodegenerative diseases such as Alzheimer's disease, dementia and mild cognitive impairment may help scientists and clinicians better understand and treat conditions or complex disease processes. We cannot be certain that this type of information will play a key role in the development of therapeutics, diagnostics or other products in the future, or that any of our findings would be accepted by clinicians, researchers or by any other potential market or industry partner or customer. If we are unable to generate additional valuable information and data about the usefulness of copper and zinc status testing, the demand for our products, applications, and services will be reduced and our business will be harmed.

We may not be able to retain rights licensed to us by others to commercialize key products and may not be able to establish or maintain the relationships we need to develop, manufacture, and market our products.

In addition to our own patent applications, we also currently rely on licensing agreements with third party patent holders/licensors for our products. Pipex, our wholly owned subsidiary, has an exclusive license agreement with the McLean Hospital relating to the use of oral flupirtine to treat fibromyalgia which was recently sublicensed to Meda AB; an exclusive license agreement with the Regents of the University of California relating to our Trimesta technology and an exclusive license agreement with the late Dr. Newsome and Mr. Tate relating to zinc-monocysteine. Each of these agreements requires us or our sublicensee to use our best efforts to commercialize each of the technologies as well as meet certain diligence requirements and timelines in order to keep the license agreement in effect. In the event we or our sublicensee are not able to meet our diligence requirements, we may not be able to retain the rights granted under our agreements or renegotiate our arrangement with these institutions on

reasonable terms, or at all. Given the recent passing of Dr. Newsome, matters relating to our license agreements are expected to be handled by his estate and heirs.

Furthermore, we currently have very limited product development capabilities, and limited marketing or sales capabilities. For us to research, develop, and test our product candidates, we would need to contract with outside researchers, in most cases those parties that did the original research and from whom we have licensed the technologies.

We can give no assurances that any of our issued patents licensed to us or any of our other patent applications will provide us with significant proprietary protection or be of commercial benefit to us. Furthermore, the issuance of a patent is not conclusive as to its validity or enforceability, nor does the issuance of a patent provide the patent holder with freedom to operate without infringing the patent rights of others.

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

Companies that currently sell or are developing both generic and proprietary pharmaceutical compounds to treat central nervous system diseases include: Pfizer, GlaxoSmithKline Pharmaceuticals, Merck & Co., Eli Lilly & Co., Biogen Idec, Forest Laboratories, Novartis, Teva Pharmaceuticals, Prana Biotechnology, Merz & Co., Alcon and Bausch and Lomb. Many of our competitors have significant financial and human resources. In addition, academic research centers may develop technologies that compete with our Trimesta, ZincMonoCysteine, reaZin gastroretentive sustained release oral high dose zinc preparations and oral flupirtine technologies. Should clinicians or regulatory authorities view these therapeutic regiments as more effective than our products, this might delay or prevent us from obtaining regulatory approval for our products, or it might prevent us from obtaining favorable reimbursement rates from payers, such as Medicare, Medicaid and private insurers. No assurance can be given that our current clinical trial of once daily reaZin for the dietary management of Alzheimer's disease and mild cognitive impairment will prove to be safe and effective.

Competitors could develop and/or gain FDA approval of our products for a different indication.

Since we do not have composition of matter patent claims for oral flupirtine and oral estriol, others may obtain approvals for other uses of these products that are not covered by our issued or pending patents. For example, the active ingredients in both Effirma (oral flurpirtine) and Trimesta (oral estriol) have been approved for marketing in overseas countries for different uses. Other companies, including the original developers or licensees or affiliates may seek to develop Effirma or Trimesta or their respective active ingredient(s) for other uses in the United States or any country we are seeking approval for. We cannot provide any assurances that any other company may obtain FDA approval for products that contain oral flupirtine or oral estriol in various formulations or delivery systems that might adversely affect our ability or the ability of our sublicensee to develop and market these products in the United States. We are aware that other companies have intellectual property protection using the active ingredients and have conducted clinical trials of oral flupirtine and oral estriol for different applications than what we are developing. Many of these companies may have more resources than us. Should a competitor obtain FDA approval for their product for any indication prior to us, we might be precluded under the Waxman-Hatch Act to obtain approval for our product candidates for a period of five years. We cannot provide any assurances that our products will be FDA approved prior to our competitors.

If the FDA approves other products containing our active ingredients to treat indications other than those covered by our issued or pending patent applications, physicians may elect to prescribe a competitor's products to treat the diseases for which we are developing—this is commonly referred to as "off-label" use. While under FDA regulations a competitor is not allowed to promote off-label uses of its product, the FDA does not regulate the practice of medicine and, as a result, cannot direct physicians as to which source it should use for these products they prescribe to their patients. Consequently, we might be limited in our ability to prevent off-label use of a competitor's product to treat the diseases we are developing, even if we have issued patents for that indication. If we are not able to obtain and enforce these patents, a competitor could use our products for a treatment or use not covered by any of our patents. We cannot provide any assurances that a competitor will not obtain FDA approval for a product that contains the same active ingredients as our products.

Our oral reaZin product candidate does not contain the patented ingredient zinc-monocysteine and is instead the subject of pending United States and international patent applications in initially filed in January 2006 (see. U.S. Ser. No 11/621,962), which may not provide substantial protection from competitive products until, if and when, such pending patents issue, if at all. As a prescription medical food, no regulatory protection is afforded through FDA regulations to prevent others from marketing similar products. No assurance can be given that our current clinical trial of once daily reaZin for the dietary management of Alzheimer's disease and mild cognitive impairment will achieve superior or sufficient safety and efficacy in order to achieve significant sales. Similarly, the CopperProof Test Panel

offered by our Adeona Clinical Labs subsidiary is the subject of pending patent applications that are expected to require a substantial amount of time to issue in order to provide protection from potential competitors.

We rely primarily on method patents and patent applications and various regulatory exclusivities to protect the development of our technologies, and our ability to compete may decrease or be eliminated if we are not able to protect our proprietary technology.

Our competitiveness may be adversely affected if we are unable to protect our proprietary technologies. Other than our ZincMonoCysteine program, we do not have composition of matter patents for Trimesta or Effirma, or their respective active ingredients oral estriol and oral flupirtine. We rely on issued patent and pending patent applications for use of Trimesta to treat multiple sclerosis (issued United States Patent No. 6,936,599) and various other therapeutic indications, which have been exclusively licensed to us. We have exclusively licensed an issued patent for the treatment of fibromyalgia with oral flupirtine, which we have sublicensed to Meda AB.

Our ZincMonoCysteine product candidate is exclusively licensed from its inventors, the late David A. Newsome, M.D., and David Tate, Jr. ZincMonoCysteine is the subject of two issued United States patents, 7,164,035 and 6,586,611 and pending United States patent application ser. no. 11/621,380 which covers composition of matter claims. In our annual report on Form 10-KSB for the year ending December 31, 2007 that was filed March 31, 2008 (page 23), we described our receipt in March of 2008 (and potential impact on claim 1 of our exclusively licensed issued United States patent 7,164,035) of an English translation of a Russian disclosure, Zegzhda et. al. Chemical Abstracts Vol. 85 Abstract No. 186052 (1976) that was cited by the United States patent examiner during our prosecution of the pending divisional United States patent application Ser. No. 11/621,390. In April of 2008, we analyzed the zinccysteine complex described by Zegzhda and concluded that such complex describes an insoluble zinc salt and does not describe a non-zinc salt zinc-monocysteine complex and therefore believe that such disclosure should not affect the validity of any of our issued United States patent claims relating our zinc-monocysteine composition of matter claims. We have filed a response and declaration describing the results of our analysis with the United States Patent and Trademark Office with respect to the Zegzhda reference with respect to United States patent application ser. no. 11/621,380. In an office action dated August 20, 2008, the United States patent examiner did not accept our arguments filed May 23, 2008 in connection with the Zegzhda reference under pending divisional application ser. no. 11/621,390, the response to which we extended with the patent office and to which we intend to respond. Public copies of relevant and future communications can be obtained using the electronic PAIR system of the United States Patent and Trademark Office.

Our reaZin (gastroretentive sustained zinc and cysteine tablets) is the subject of United States and international pending patent applications, such as published United States patent application Ser. No. 11/621,962 and corresponding international applications that claim priority to January 10, 2006 as well as additional unpublished patent applications. No assurance can be given that such pending patent applications will issue or issue with claims satisfactorily broad enough to prevent others from developing and marketing competing products.

The patent positions of pharmaceutical companies are uncertain and may involve complex legal and factual questions. We may incur significant expense in protecting our intellectual property and defending or assessing claims with respect to intellectual property owned by others. Any patent or other infringement litigation by or against us could cause us to incur significant expense and divert the attention of our management.

We may also rely on the United States Drug Price Competition and Patent Term Restoration Act, commonly known as the "Hatch-Waxman Amendments," to protect some of our current product candidates, specifically Trimesta and ZincMonoCysteine and other future product candidates we may develop. Once a drug containing a new molecule is approved by the FDA, the FDA cannot accept an abbreviated NDA for a generic drug containing that molecule for five years, although the FDA may accept and approve a drug containing the molecule pursuant to an NDA supported by independent clinical data. Recent amendments have been proposed that would narrow the scope of Hatch-Waxman exclusivity and permit generic drugs to compete with our drug.

Others may file patent applications or obtain patents on similar technologies or compounds that compete with our products. We cannot predict how broad the claims in any such patents or applications will be, and whether they will be allowed. Once claims have been issued, we cannot predict how they will be construed or enforced. We may infringe intellectual property rights of others without being aware of it. If another party claims we are infringing their technology, we could have to defend an expensive and time consuming lawsuit, pay a large sum if we are found to be infringing, or be prohibited from selling or licensing our products unless we obtain a license or redesign our product, which may not be possible.

We also rely on trade secrets and proprietary know-how to develop and maintain our competitive position. Some of our current or former employees, consultants, scientific advisors, current or prospective corporate collaborators, may unintentionally or willfully disclose our confidential information to competitors or use our proprietary technology for their own benefit. Furthermore, enforcing a claim alleging the infringement of our trade secrets would be expensive and difficult to prove, making the outcome uncertain. Our competitors may also independently develop similar knowledge, methods, and know-how or gain access to our proprietary information through some other means.

We may fail to retain or recruit necessary personnel, and we may be unable to secure the services of consultants.

As of December 31, 2010, we have 13 employees. We have also engaged regulatory consultants to advise us on our dealings with the FDA and other foreign regulatory authorities. Our future performance will depend in part on our ability to successfully integrate newly hired officers into our management team and our ability to develop an effective working relationship among senior management.

Certain of our directors (Jeffrey Kraws, a director and former VP of Business Development, Jeffrey Wolf, a director, Steve Kanzer, a director and former Chairman and CEO, and Jeff Riley, a director), scientific advisors, and consultants serve as officers, directors, scientific advisors, or consultants of other biopharmaceutical or biotechnology companies that might be developing competitive products to ours. Other than corporate opportunities, none of our directors are obligated under any agreement or understanding with us to make any additional products or technologies available to us. Similarly, we can give no assurances, and we do not expect and stockholders should not expect, that any biomedical or pharmaceutical product or technology identified by any of our directors or affiliates in the future would be made available to us other than corporate opportunities. We can give no assurances that any such other

companies will not have interests that are in conflict with our interests.

Losing key personnel or failing to recruit necessary additional personnel would impede our ability to attain our development objectives. David A. Newsome, M.D., our former Senior Vice President of Research and Development recently passed away. There is intense competition for qualified personnel in the drug-development field, and we may not be able to attract and retain the qualified personnel we would need to develop our business.

We rely on independent organizations, advisors, and consultants to perform certain services for us, including handling substantially all aspects of regulatory approval, clinical management, manufacturing, marketing, and sales. We expect that this will continue to be the case. Such services may not always be available to us on a timely basis when we need them.

We may experience difficulties in obtaining sufficient quantities of our products or other compounds.

In order to successfully commercialize our product candidates, we and our sublicensees must be able to manufacture our products in commercial quantities, in compliance with regulatory requirements, at acceptable costs, and in a timely manner. Manufacture of the types of biopharmaceutical products that we propose to develop present various risks. For example, the manufacture of zinc-monocysteine is a complex process that can be difficult to scale up for purposes of producing large quantities at an acceptable cost. This process can also be subject to delays, inefficiencies, and poor or low yields of quality products. As such, we can give no assurances that we will be able to scale up the manufacturing of zinc-monocysteine.

For manufacturing and nonclinical information for Trimesta (oral estriol), we have relied upon an agreement with Organon, a division of Schering-Plough for access to clinical, nonclinical, stability and drug supply relating to oral estriol, the active ingredient in Trimesta, which is currently in clinical trial for multiple sclerosis. Should Organon terminate our agreement or be unable or unwilling to continue to supply Trimesta to us, this might delay enrollment and commercialization plans for our Trimesta clinical trial program. Organon has manufactured oral estriol the active ingredient of Trimesta for the European and Asian market for approximately 40 years but has never been approved in the United States. Organon has recently informed us of their decision to discontinue supply of estriol tablets beyond that required to satisfy the planned future needs of the ongoing clinical trial in relapsing-remitting multiple sclerosis. Accordingly, prior to initiation of additional clinical studies and/or commercial launch of oral estriol, we may need to identify and execute supply agreement(s) on terms suitable to us with an alternate supplier of estriol tablets.

Our plans to launch oral reaZin as a prescription medical food for the dietary management of zinc deficiency in Alzheimer's disease and mild cognitive impairment will depend upon the successful cGMP manufacture, quality control and acceptable results of stability studies to be performed for reaZin for which we are utilizing and intend to engage third party contract manufacturers and analytic testing services, as well as the successful completion and results of Part 2 of our CopperProof-2 clinical trial being conducted at two centers in Florida.

Historically, our manufacturing has been handled by contract manufacturers and compounding pharmacies. We can give no assurances that we will be able to continue to use our current manufacturer or be able to establish another relationship with a manufacturer quickly enough so as not to disrupt commercialization of any of our products, or that commercial quantities of any of our products, if approved for marketing, will be available from contract manufacturers at acceptable costs.

In addition, any contract manufacturer that we select to manufacture our product candidates might fail to maintain a current "good manufacturing practices" (cGMP) manufacturing facility.

The cost of manufacturing certain product candidates may make them prohibitively expensive. In order to successfully commercialize our product candidates we may be required to reduce the costs of production, and we may find that we are unable to do so. We may be unable to obtain, or may be required to pay high prices for compounds manufactured or sold by others that we need for comparison purposes in clinical trials and studies for our product candidates.

The manufacture of our products is a highly exacting process, and if we or one of our materials suppliers encounter problems manufacturing our products, our business could suffer.

The FDA and foreign regulators require manufacturers to register manufacturing facilities. The FDA and foreign regulators also inspect these facilities to confirm compliance with cGMP or similar requirements that the FDA or foreign regulators establish. We, or our materials suppliers, may face manufacturing or quality control problems causing product production and shipment delays or a situation where we or the supplier may not be able to maintain compliance with the FDA's cGMP requirements, or those of foreign regulators, necessary to continue manufacturing our drug substance. Any failure to comply with cGMP requirements or other FDA or foreign regulatory requirements could adversely affect our clinical research activities and our ability to market and develop our products.

If our laboratory facilities are damaged, our business would be seriously harmed.

Our only laboratory facility for copper and zinc testing products and general reference lab services is located in Bolingbrook, IL. Damage to our facility due to war, fire, natural disaster, power loss, communications failure, terrorism, unauthorized entry, or other events could prevent us from conducting our business for an indefinite period, could result in a loss of important data or cause us to cease development and production of our products. We cannot be certain that our limited insurance to protect against business interruption would be adequate or would continue to be available to us on commercially reasonable terms, or at all.

If the parties we depend on for supplying our drug substance raw materials and certain manufacturing-related services do not timely supply these products and services, it may delay or impair our ability to develop, manufacture and market our products.

We rely on suppliers for our drug substance raw materials and third parties for certain manufacturing-related services to produce material that meets appropriate content, quality and stability standards and use in clinical trials of our products and, after approval, for commercial distribution. To succeed, clinical trials require adequate supplies of drug substance and drug product, which may be difficult or uneconomical to procure or manufacture. We and our suppliers and vendors may not be able to (i) produce our drug substance or drug product to appropriate standards for use in clinical studies, (ii) perform under any definitive manufacturing, supply or service agreements with us or (iii) remain in business for a sufficient time to successfully produce and market our product candidates. If we do not maintain important manufacturing and service relationships, we may fail to find a replacement supplier or required vendor or develop our own manufacturing capabilities which could delay or impair our ability to obtain regulatory approval for our products and substantially increase our costs or deplete profit margins, if any. If we do find replacement manufacturers and vendors, we may not be able to enter into agreements with them on terms and conditions favorable to us and, there could be a substantial delay before a new facility could be qualified and registered with the FDA and foreign regulatory authorities.

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

Human clinical trials are very expensive and difficult to design and implement, in part because they are subject to rigorous regulatory requirements. The clinical trial process is also time-consuming. We estimate that clinical trials of our product candidates would take at least several years to complete. Furthermore, failure can occur at any stage of the trials, and we could encounter problems that cause us to abandon or repeat clinical trials. Commencement and completion of clinical trials may be delayed by several factors, including:

- unforeseen safety issues;
- determination of dosing;
- lack of effectiveness during clinical trials;
- slower than expected rates of patient recruitment;
- inability to monitor patients adequately during or after treatment; and
- inability or unwillingness of medical investigators to follow our clinical protocols.

In addition, we or the FDA may suspend our clinical trials at any time if it appears that we are exposing participants to unacceptable health risks or if the FDA finds deficiencies in our submissions or conduct of our trials.

The results of our clinical trials may not support our product candidate claims and the results of preclinical studies and completed clinical trials are not necessarily predictive of future results.

To date, long-term safety and efficacy have not yet been demonstrated in clinical trials for any of our diagnostic product candidates. Favorable results in our early studies or trials may not be repeated in later studies or trials. Even if our clinical trials are initiated and completed as planned, we cannot be certain that the results will support our product candidate claims. Success in preclinical testing and Phase II clinical trials does not ensure that later Phase II or Phase III clinical trials will be successful. We cannot be sure that the results of later clinical trials would replicate the results of prior clinical trials and preclinical testing. In particular, the limited results that we have obtained for our diagnostic tests may not predict results from studies in larger numbers of subjects drawn from more diverse populations over a longer period of time. Clinical trials may fail to demonstrate that our product candidates are safe for humans and effective for indicated uses. Any such failure could cause us or our sublicensee to abandon a product candidate and might delay development of other product candidates. Preclinical and clinical results are frequently susceptible to

varying interpretations that may delay, limit or prevent regulatory approvals or commercialization. Any delay in, or termination of, our clinical trials would delay our obtaining FDA approval for the affected product candidate and, ultimately, our ability to commercialize that product candidate.

Physicians and patients may not accept and use our technologies.

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

- the perception of members of the health care community, including physicians, regarding the safety and effectiveness of our product candidates;

- the cost-effectiveness of our product relative to competing products;
- availability of reimbursement for our products from government or other healthcare payers; and
- the effectiveness of marketing and distribution efforts by us and our licensees and distributors, if any.

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

We depend on third parties, including researchers and sublicensees, who are not under our control.

Since we have in-licensed some of our product candidates and have sublicensed a product candidate, we depend upon our sublicensee and independent investigators and scientific collaborators, such as universities and medical institutions or private physician scientists, to conduct our preclinical and clinical trials under agreements with us. These collaborators are not our employees and we cannot control the amount or timing of resources that they devote to our programs or the timing of their procurement of clinical-trial data or their compliance with applicable regulatory guidelines. Should any of these scientific inventors/advisors or those of our sublicensee become disabled or die unexpectedly, or should they fail to comply with applicable regulatory guidelines, we or our sublicensee may be forced to scale back or terminate development of that program. They may not assign as great a priority to our programs or pursue them as diligently as we would if we were undertaking those programs ourselves. Failing to devote sufficient time and resources to our drug-development programs, or substandard performance and failure to comply with regulatory guidelines, could result in delay of any FDA applications and our commercialization of the drug candidate involved.

These collaborators may also have relationships with other commercial entities, some of which may compete with us. Our collaborators assisting our competitors at our expense could harm our competitive position. For example, we are highly dependent on scientific collaborators for our Trimesta and ZincMonoCysteine development programs. Specifically, all of the clinical trials have been conducted under physician-sponsored investigational new drug applications (INDs), not corporate-sponsored INDs. Generally, we have experienced difficulty in collecting data generated from these physician-sponsored clinical trials for our programs. We cannot provide any assurances that we will not experience any additional delays in the future. We have experienced similar difficulties with our zinc-monocysteine program.

We are also highly dependent on government and private grants to fund certain of our clinical trials for our product candidates. For example, Trimesta (oral estriol) has received a $5 million grant from the Southern California Chapter of the National Multiple Sclerosis Society and the National Institutes of Health which funds a majority of our ongoing 150 patient clinical trial in relapsing-remitting multiple sclerosis. If our scientific collaborator is unable to maintain these grants, we might be forced to scale back or terminate the development of this product candidate. We will also need to cross reference our IND with the inventor/IND holder for this program should we elect to file our own corporate IND for our Trimesta (oral estriol) program.

The on-going and future development and commercialization of Effirma (oral flupirtine) for fibromyalgia is the responsibility of Meda AB and no assurance can be given that Meda will gain FDA approval of oral flupirtine for fibromyalgia.

We have no experience selling, marketing, or distributing products and do not have the capability to do so.

We currently have no sales, marketing, or distribution capabilities. We do not anticipate having significant resources in the foreseeable future to allocate to selling and marketing our proposed products. Our success will depend, in part, on whether we are able to enter into and maintain collaborative relationships with a pharmaceutical or a biotechnology

company charged with marketing one or more of our products. We may not be able to establish or maintain such collaborative arrangements or to commercialize our products in foreign territories, and even if we do, our collaborators may not have effective sales forces.

If we do not, or are unable to, enter into collaborative arrangements to sell and market our proposed products, we will need to devote significant capital, management resources, and time to establishing and developing an in-house marketing and sales force with technical expertise. We may be unsuccessful in doing so.

If we fail to maintain positive relationships with particular individuals, we may be unable to successfully develop our product candidates, conduct clinical trials, and obtain financing.

If we fail to maintain positive relationships with members of our management team or if these individuals decrease their contributions to our company, our business could be adversely impacted. We do not carry key employee insurance policies for any of our key employees.

We also rely greatly on employing and retaining other highly trained and experienced senior management and scientific personnel. The competition for these and other qualified personnel in the biotechnology field is intense. If we are not able to attract and retain qualified scientific, technical, and managerial personnel, we probably will be unable to achieve our business objectives.

We may not be able to compete successfully for market share against other drug companies.

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

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

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

We may incur substantial costs as a result of litigation or other proceedings relating to patent and other intellectual property rights, as well as costs associated with frivolous lawsuits.

If any other person files patent applications, or is issued patents, claiming technology also claimed by us in pending applications, we may be required to participate in interference proceedings in the United States Patent and Trademark Office to determine priority of invention. We, or our licensors, may also need to participate in interference proceedings involving our issued patents and pending applications of another entity.

We cannot guarantee that the practice of our technologies will not conflict with the rights of others. In some foreign jurisdictions, we could become involved in opposition proceedings, either by opposing the validity of another's foreign patent or by persons opposing the validity of our foreign patents.

We may also face frivolous litigation or lawsuits from various competitors or from litigious securities attorneys. The cost to us of any litigation or other proceeding relating to these areas, even if resolved in our favor, could be substantial and could distract management from our business. Uncertainties resulting from initiation and continuation of any litigation could have a material adverse effect on our ability to continue our operations.

If we infringe the rights of others we could be prevented from selling products or forced to pay damages.

If our products, methods, processes, and other technologies are found to infringe the proprietary rights of other parties, we could be required to pay damages, or we may be required to cease using the technology or to license rights from the prevailing party. Any prevailing party may be unwilling to offer us a license on commercially acceptable terms.

Our products, if approved, may not be commercially viable due to change in health care practice and third party reimbursement limitations

Recent initiatives to reduce the federal deficit and to change health care delivery are increasing cost-containment efforts. We anticipate that Congress, state legislatures and the private sector will continue to review and assess alternative benefits, controls on health care spending through limitations on the growth of private health insurance premiums and Medicare and Medicaid spending, price controls on pharmaceuticals, and other fundamental changes to the health care delivery system. Any changes of this type could negatively impact the commercial viability of our products, if approved. Our ability to successfully commercialize our product candidates, if they are approved, will depend in part on the extent to which appropriate reimbursement codes and authorized cost reimbursement levels of these products and related treatment are obtained from governmental authorities, private health insurers and other organizations, such as health maintenance organizations. In the absence of national Medicare coverage determination, local contractors that administer the Medicare program may make their own coverage decisions. Any of our product candidates, if approved and when commercially available, may not be included within the then current Medicare coverage determination or the coverage determination of state Medicaid programs, private insurance companies or other health care providers. In addition, third-party payers are increasingly challenging the necessity and prices charged for medical products, treatments and services.

We do not currently have product liability or malpractice insurance and may not be able to obtain adequate insurance coverage against product liability claims

Our business exposes us to potential product liability and other types of claims and our exposure will increase as we prepare to commercialize our copper and zinc status tests. We do not currently have any product liability or malpractice insurance that would cover us against any product liability, or malpractice claims. Any such claim would have to be paid out of our cash reserves, which would have a detrimental effect on our financial condition. Even if it is available, product liability insurance for the pharmaceutical and biotechnology industry generally is expensive. Adequate insurance coverage may not be available at a reasonable cost. We cannot assure you that we can or will be able to obtain product liability or malpractice insurance policies on commercially acceptable terms, or at all.

RISKS RELATING TO OUR STOCK

We will seek to raise additional funds in the future, which may be dilutive to stockholders or impose operational restrictions.

We expect to seek to raise additional capital in the future to help fund development of our proposed products. If we raise additional capital through the issuance of equity (as we recently have) or of debt securities, the percentage ownership of our current stockholders will be reduced. We may also enter into strategic transactions, issue equity as part of license issue fees to our licensors, compensate consultants or settle outstanding payables using equity that may be dilutive. Our stockholders may experience additional dilution in net book value per share and any additional equity securities may have rights, preferences and privileges senior to those of the holders of our common stock. If we cannot raise additional funds, we will have to delay development activities of our products candidates.

We are substantially controlled by our current officers, directors, and principal stockholders.

Currently, our directors, executive officer, and principal stockholders beneficially own a substantial number of shares of our common stock. As a result, they will be able to exert substantial influence over the election of our board of directors and the vote on issues submitted to our stockholders. Our executive officer, directors and principal stockholders beneficially owned approximately 12.1 million shares of our common stock, including the stock options and warrants exercisable within 60 days of March 25, 2011. Because our common stock has from time to time been “thinly traded”, the sale of these shares by our executive officer, directors and principal stockholders could have an adverse effect on the market for our stock and our share price.

Our shares of common stock are from time to time thinly traded, so stockholders may be unable to sell at or near ask prices or at all if they need to sell shares to raise money or otherwise desire to liquidate their shares.

Our common stock has from time to time been “thinly-traded,” meaning that the number of persons interested in purchasing our common stock at or near ask prices at any given time may be relatively small or non-existent. This situation is attributable to a number of factors, including the fact that we are a small company that is relatively unknown to stock analysts, stock brokers, institutional investors and others in the investment community that generate or influence sales volume, and that even if we came to the attention of such persons, they tend to be risk-averse and would be reluctant to follow an unproven company such as ours or purchase or recommend the purchase of our shares until such time as we became more seasoned and viable. As a consequence, there may be periods of several days or more when trading activity in our shares is minimal or non−existent, as compared to a seasoned issuer which has a large and steady volume of trading activity that will generally support continuous sales without an adverse effect on share price. We cannot give stockholders any assurance that a broader or more active public trading market for our common shares will develop or be sustained, or that current trading levels will be sustained.

Our compliance with the Sarbanes-Oxley Act and SEC rules concerning internal controls may be time consuming, difficult and costly.

Although individual members of our management team have experience as officers of publicly traded companies, much of that experience came prior to the adoption of the Sarbanes-Oxley Act of 2002. It may be time consuming, difficult and costly for us to develop and implement the internal controls and reporting procedures required by Sarbanes-Oxley. We may need to hire additional financial reporting, internal controls and other finance staff in order to develop and implement appropriate internal controls and reporting procedures. If we are unable to comply with Sarbanes-Oxley's internal controls requirements, we may not be able to obtain the independent accountant certifications that Sarbanes-Oxley Act requires publicly traded companies to obtain.

We cannot assure you that the common stock will be liquid or that it will remain listed on a securities exchange.

We cannot assure you that we will be able to maintain the continued listing standards of the NYSE Amex (formerly the American Stock Exchange) or NYSE Alternext US. The NYSE Amex requires companies to meet certain continued listing criteria including certain minimum stockholders' equity and equity prices per share as outlined in the Exchange Company Guide. We may not be able to maintain such minimum stockholders' equity or prices per share or may be required to effect a reverse stock split to maintain such minimum prices and/or issue additional equity securities in exchange for cash or other assets, if available, to maintain certain minimum stockholders' equity required by the NYSE Amex. If we are delisted from the Exchange then our common stock will trade, if at all, only on the over-the-counter market, such as the OTC Bulletin Board securities market, and then only if one or more registered broker-dealer market makers comply with quotation requirements. In addition, delisting of our common stock could depress our stock price, substantially limit liquidity of our common stock and materially adversely affect our ability to raise capital on terms acceptable to us, or at all. Delisting from the Exchange could also have other negative results, including the potential loss of confidence by suppliers and employees, the loss of institutional investor interest and fewer business development opportunities. In order to remain listed on NYSE Amex, we are required to maintain a minimum stockholders' equity of $6 million. As of December 31, 2010, our stockholders' equity did not exceed $6 million; however after the receipt of proceeds from our recent offering we believe our stockholder's equity will exceed $6 million. Moreover, although we believe we had maintained a minimum stockholders' equity of $6 million as of March 31, 2011, we will not know with any certainty until the final accounting for that quarter is completed.

There may be issuances of shares of preferred stock in the future.

Although we currently do not have preferred shares outstanding, the board of directors could authorize the issuance of a series of preferred stock that would grant holders preferred rights to our assets upon liquidation, the right to receive dividends before dividends would be declared to common stockholders, and the right to the redemption of such shares, possibly together with a premium, prior to the redemption of the common stock. To the extent that we do issue preferred stock, the rights of holders of common stock could be impaired thereby, including without limitation, with respect to liquidation.

We have never paid dividends.

We have never paid cash dividends on our common stock and do not anticipate paying any for the foreseeable future.

RISKS RELATED TO OUR INDUSTRY

We are subject to government regulation, compliance with which can be costly and difficult.

In the United States, the formulation, manufacturing, packaging, storing, labeling, promotion, advertising, distribution and sale of our products are subject to regulation by various governmental agencies, including (1) the Food and Drug Administration, or FDA, (2) the Federal Trade Commission, or FTC, (3) the Consumer Product Safety Commission, or CPSC, (4) the United States Department of Agriculture, or USDA. Our proposed activities may also be regulated by various agencies of the states, localities and foreign countries in which our proposed products may be manufactured, distributed and sold. The FDA, in particular, regulates the formulation, manufacture and labeling of over-the-counter, or OTC, drugs, conventional foods, dietary supplements, and cosmetics such as those that we intend to distribute. FDA regulations require us and our suppliers to meet relevant current good manufacturing practice, or cGMP, regulations for the preparation, packing and storage of foods and OTC drugs. As a result of inactivity and the removal and sale of certain equipment, our facility in Ann Arbor, Michigan is no longer currently cGMP compliant.

The United States Dietary Supplement Health and Education Act of 1994, or DSHEA, revised the provisions of the Federal Food, Drug and Cosmetic Act, or FFDCA, concerning the composition and labeling of dietary supplements and, we believe, the revisions are generally favorable to the dietary supplement industry. The legislation created a new statutory class of dietary supplements. This new class includes vitamins, minerals, herbs, amino acids and other dietary substances for human use to supplement the diet, and the legislation grandfathers, with some limitations, dietary ingredients that were on the market before October 15, 1994. A dietary supplement that contains a dietary ingredient that was not on the market before October 15, 1994 will require evidence of a history of use or other evidence of safety establishing that it is reasonably expected to be safe. Manufacturers or marketers of dietary supplements in the United States and certain other jurisdictions that make product performance claims, including structure or function claims, must have substantiation in their possession that the statements are truthful and not misleading. The majority of the products marketed by us in the United States are classified as conventional foods or dietary supplements under the FFDCA. Internationally, the majority of products marketed by us are classified as foods or food supplements.

In January 2000, the FDA issued a regulation that defines the types of statements that can be made concerning the effect of a dietary supplement on the structure or function of the body pursuant to DSHEA. Under DSHEA, dietary supplement labeling may bear structure or function claims, which are claims that the products affect the structure or function of the body, without prior FDA approval, but with notification to the FDA. They may not bear a claim that they can prevent, treat, cure, mitigate or diagnose disease (a disease claim). The regulation describes how the FDA distinguishes disease claims from structure or function claims. During 2004, the FDA issued guidance, paralleling an earlier guidance from the FTC, defining a manufacturer's obligations to substantiate structure/function claims. The FDA also issued a Structure/Function Claims Small Entity Compliance Guide. In addition, the agency permits companies to use FDA-approved full and qualified health claims for products containing specific ingredients that meet stated requirements.

In order to make disease claims, we may seek to market some of our proposed products as medical foods for the dietary management of certain diseases. Medical foods are defined in section 5(b) of the Orphan Drug Act (21 U.S.C. 360ee (b) (3)) is "a food which is formulated to be consumed or administered internally under the supervision of a physician and which is intended for the specific dietary management of a disease or condition for which distinctive nutritional requirements, based on recognized scientific principles, are established by medical evaluation." We believe our products may qualify as medical foods provided we are able to generate, and have published, sufficient clinical data to support such claims. Medical foods are required to be utilized under a medical doctor’s supervision and as such, our distribution channels may be limited and/or complicated.

Should we seek to make disease claims beyond those permitted for medical foods, we may seek to conduct necessary clinical trials to support such claims and file one or more New Drug Applications with respect to such products which would be the subject of the time, expense and uncertainty associated with achieving approval of such NDA by the FDA.

On December 22, 2007, a new law went into effect in the United States mandating the reporting of all serious adverse events occurring within the United States which involve dietary supplements or OTC drugs. We believe that in order to be in compliance with this law we will be required to implement a worldwide procedure governing adverse event identification, investigation and reporting. As a result of our receipt of adverse event reports, we may from time to time elect, or be required, to remove a product from a market, either temporarily or permanently.

Some of the products marketed by us are considered conventional foods and are currently labeled as such. Within the United States, this category of products is subject to the Nutrition, Labeling and Education Act, or NLEA, and regulations promulgated under the NLEA. The NLEA regulates health claims, ingredient labeling and nutrient content claims characterizing the level of a nutrient in the product. The ingredients added to conventional foods must either be generally recognized as safe by experts, or GRAS, or be approved as food additives under FDA regulations. Our zinc-monocysteine complexes are comprised of zinc (a GRAS ingredient) and cysteine (an amino acid that also has GRAS status). While many chelated zinc products are currently on the market and are generally not considered new dietary ingredients, we cannot provide any assurance that zinc-monocysteine will be similarly considered by the FDA.

The FTC, which exercises jurisdiction over the advertising of all of our proposed products, has in the past several years instituted enforcement actions against several dietary supplement companies and against manufacturers of products generally for false and misleading advertising of some of their products. These enforcement actions have often resulted in consent decrees and monetary payments by the companies involved. In addition, the FTC has increased its scrutiny of the use of testimonials, which we also utilize, as well as the role of expert endorsers and product clinical studies. It is unclear whether the FTC will subject our advertisements to increased surveillance to ensure compliance with the principles set forth in its published advertising guidance. The copper industry has supported research studies that conclude that copper has no effect in Alzheimer’s disease. In February 2007, the State of California issued its public health goal for copper in drinking water and considered the research studies mentioned

above as well as those of our scientific collaborators and concluded that at the present time, the data with respect to copper in drinking water's role in Alzheimer's disease were to be "equivocal". We cannot provide assurance that the FTC will allow us to publically advertise or promote our products to the American public.

The FDA, comparable foreign regulators and state and local pharmacy regulators impose substantial requirements upon clinical development, manufacture and marketing of pharmaceutical products. These and other entities regulate research and development and the testing, manufacture, quality control, safety, effectiveness, labeling, storage, record keeping, approval, advertising, and promotion of our products. The drug approval process required by the FDA under the Food, Drug, and Cosmetic Act generally involves:

- preclinical laboratory and animal tests;
- submission of an IND, prior to commencing human clinical trials;
- adequate and well-controlled human clinical trials to establish safety and efficacy for intended use;
- submission to the FDA of a NDA; and
- FDA review and approval of a NDA.

The testing and approval process requires substantial time, effort, and financial resources, and we cannot be certain that any approval will be granted on a timely basis, if at all.

Preclinical tests include laboratory evaluation of the product candidate, its chemistry, formulation and stability, and animal studies to assess potential safety and efficacy. Certain preclinical tests must be conducted in compliance with good laboratory practice regulations. Violations of these regulations can, in some cases, lead to invalidation of the studies, requiring them to be replicated. In some cases, long-term preclinical studies are conducted concurrently with clinical studies.

We will submit the preclinical test results, together with manufacturing information and analytical data, to the FDA as part of an IND, which must become effective before we begin human clinical trials. The IND automatically becomes effective 30 days after filing, unless the FDA raises questions about conduct of the trials outlined in the IND and imposes a clinical hold, in which case, the IND sponsor and FDA must resolve the matters before clinical trials can begin. It is possible that our submission may not result in FDA authorization to commence clinical trials.

Clinical trials must be supervised by a qualified investigator in accordance with good clinical practice regulations, which include informed consent requirements. An independent Institutional Review Board ("IRB") at each medical center reviews and approves and monitors the study, and is periodically informed of the study's progress, adverse events and changes in research. Progress reports are submitted annually to the FDA and more frequently if adverse events occur.

Human clinical trials typically have three sequential phases that may overlap:

Phase I: The drug is initially tested in healthy human subjects or patients for safety, dosage tolerance, absorption, metabolism, distribution, and excretion.

Phase II: The drug is studied in a limited patient population to identify possible adverse effects and safety risks, determine efficacy for specific diseases and establish dosage tolerance and optimal dosage.

Phase III: When phase II evaluations demonstrate that a dosage range is effective with an acceptable safety profile, Phase III trials to further evaluate dosage, clinical efficacy and safety, are undertaken in an expanded patient population, often at geographically dispersed sites.

We cannot be certain that we will successfully complete Phase I, Phase II, or Phase III testing of our product candidates within any specific time period, if at all. Furthermore, the FDA, an IRB or the IND sponsor may suspend clinical trials at any time on various grounds, including a finding that subjects or patients are exposed to unacceptable health risk. Concurrent with these trials and studies, we also develop chemistry and physical characteristics data and finalize a manufacturing process in accordance with good manufacturing practice ("GMP") requirements. The manufacturing process must conform to consistency and quality standards, and we must develop methods for testing the quality, purity, and potency of the final products. Appropriate packaging is selected and tested, and chemistry stability studies are conducted to demonstrate that the product does not undergo unacceptable deterioration over its shelf-life. Results of the foregoing are submitted to the FDA as part of a NDA for marketing and commercial shipment approval. The FDA reviews each NDA submitted and may request additional information.

Once the FDA accepts the NDA for filing, it begins its in-depth review. The FDA has substantial discretion in the approval process and may disagree with our interpretation of the data submitted. The process may be significantly extended by requests for additional information or clarification regarding information already provided. As part of this review, the FDA may refer the application to an appropriate advisory committee, typically a panel of clinicians. Manufacturing establishments often are inspected prior to NDA approval to assure compliance with GMPs and with

manufacturing commitments made in the application.

Submission of a NDA with clinical data requires payment of a fee. In return, the FDA assigns a goal of ten months for issuing its "complete response," in which the FDA may approve or deny the NDA, or require additional clinical data. Even if these data are submitted, the FDA may ultimately decide the NDA does not satisfy approval criteria. If the FDA approves the NDA, the product becomes available for physicians prescription. Product approval may be withdrawn if regulatory compliance is not maintained or safety problems occur. The FDA may require post-marketing studies, also known as phase IV studies, as a condition of approval, and requires surveillance programs to monitor approved products that have been commercialized. The agency has the power to require changes in labeling or prohibit further marketing based on the results of post-marketing surveillance.

Satisfaction of these and other regulatory requirements typically takes several years, and the actual time required may vary substantially based upon the type, complexity and novelty of the product. Government regulation may delay or prevent marketing of potential products for a considerable period of time and impose costly procedures on our activities. We cannot be certain that the FDA or other regulatory agencies will approve any of our products on a timely basis, if at all. Success in preclinical or early-stage clinical trials does not assure success in later-stage clinical trials. Data obtained from preclinical and clinical activities are not always conclusive and may be susceptible to varying interpretations that could delay, limit or prevent regulatory approval. Even if a product receives regulatory approval, the approval may be significantly limited to specific indications or uses.

Even after regulatory approval is obtained, later discovery of previously unknown problems with a product may result in restrictions on the product or even complete withdrawal of the product from the market. Delays in obtaining, or failures to obtain regulatory approvals would have a material adverse effect on our business.

Any products manufactured or distributed by us pursuant to FDA approvals are subject to pervasive and continuing FDA regulation, including record-keeping requirements, reporting of adverse experiences, submitting periodic reports, drug sampling and distribution requirements, manufacturing or labeling changes, record-keeping requirements, and compliance with FDA promotion and advertising requirements. Drug manufacturers and their subcontractors are required to register their facilities with the FDA and state agencies, and are subject to periodic unannounced inspections for GMP compliance, imposing procedural and documentation requirements upon us and third-party manufacturers. Failure to comply with these regulations could result, among other things, in suspension of regulatory approval, recalls, suspension of production or injunctions, seizures, or civil or criminal sanctions. We cannot be certain that we or our present or future subcontractors will be able to comply with these regulations.

The FDA regulates drug labeling and promotion activities. The FDA has actively enforced regulations prohibiting the marketing of products for unapproved uses. The FDA permits the promotion of drugs for unapproved uses in certain circumstances, subject to stringent requirements. We and our product candidates are subject to a variety of state laws and regulations which may hinder our ability to market our products. Whether or not FDA approval has been obtained, approval by foreign regulatory authorities must be obtained prior to commencing clinical trials, and sales and marketing efforts in those countries. These approval procedures vary in complexity from country to country, and the processes may be longer or shorter than that required for FDA approval. We may incur significant costs to comply with these laws and regulations now or in the future.

The FDA’s policies may change, and additional government regulations may be enacted which could prevent or delay regulatory approval of our potential products. Increased attention to the containment of health care costs worldwide could result in new government regulations materially adverse to our business. We cannot predict the likelihood, nature or extent of adverse governmental regulation that might arise from future legislative or administrative action, either in the United States or abroad.

Failure to adhere to the quality control and other regulatory requirements could result in the suspension of such certification necessary to perform clinical testing and generate revenues.

The United States Federal Trade Commission and the Office of the Inspector General of the United States Department of Health and Human Services (“HHS”) also regulate certain pharmaceutical marketing practices. Government reimbursement practices and policies with respect to our products are important to our success.

We are subject to numerous federal, state and local laws relating to safe working conditions, manufacturing practices, environmental protection, fire hazard control, and disposal of hazardous or potentially hazardous substances. We may incur significant costs to comply with these laws and regulations. The regulatory framework under which we operate will inevitably change in light of scientific, economic, demographic and policy developments and such changes may

have a material adverse effect on our business.

Clinical laboratories in the United States are subject to regulation under the Clinical Laboratory Improvements Act of 1988 (“CLIA”) as well as corresponding state regulations. Failure to adhere to the quality control and other regulatory requirements of CLIA could result in the suspension of such certification necessary to perform clinical testing and generate revenues.

Failure to comply with requirements of the European Union can be costly and time consuming.

Prior regulatory approval for human healthy volunteer studies (Phase I studies) is required in member states of the European Union (E.U.). Summary data from successful Phase I studies are submitted to regulatory authorities in member states to support applications for Phase II studies. E.U. authorities typically have one to three months (which often may be extended in their discretion) to raise objections to the proposed study. One or more independent ethics committees (similar to United States IRBs) review relevant ethical issues.

For E.U. marketing approval, we submit to the relevant authority for review a dossier, or MAA (Market Authorization Application), providing information on the quality of the chemistry, manufacturing and pharmaceutical aspects of the product as well as non-clinical and clinical data.

Approval can take several months to several years, and can be denied, depending on whether additional studies or clinical trials are requested (which may delay marketing approval and involve unbudgeted costs) or regulatory authorities conduct facilities (including clinical investigation site) inspections and review manufacturing procedures, operating systems and personnel qualifications. In many cases, each drug manufacturing facility must be approved, and further inspections may occur over the product's life.

The regulatory agency may require post-marketing surveillance to monitor for adverse effects or other studies. Further clinical studies are usually necessary for approval of additional indications. The terms of any approval, including labeling content, may be more restrictive than expected and could affect the marketability of a product.

Failure to comply with these ongoing requirements can result in suspension of regulatory approval and civil and criminal sanctions. European renewals may require additional data, resulting in a license being withdrawn. E.U. regulators have the authority to revoke, suspend or withdraw approvals, prevent companies and individuals from participating in the drug approval process, request recalls, seize violative products, obtain injunctions to close non-compliant manufacturing plants and stop shipments of violative products.

We are subject to pricing controls that may not result in favorable arrangements for our products.

Pricing for products under approval applications is also subject to regulation. Requirements vary widely between countries and can be implemented disparately intra-nationally. The E.U. generally provides options for member states to control pricing of medicinal products for human use, ranging from specific price-setting to systems of direct or indirect controls on the producer's profitability. U.K. regulation, for example, generally provides controls on overall profits derived from sales to the U.K. National Health Service that are based on profitability targets or a function of capital employed in servicing the National Health Service market. Italy generally utilizes a price monitoring system based on the European average price over the reference markets of France, Spain, Germany and the U.K. Italy typically establishes price within a therapeutic class based on the lowest price for a medicine belonging to that category. Spain generally establishes selling price based on prime cost plus a profit margin within a range established yearly by the Spanish Commission for Economic Affairs.

There can be no assurance that price controls or reimbursement limitations will result in favorable arrangements for our products.

If we are not able to receive third-party reimbursements we may not be able to sell products at competitive prices.

In the United States, the E.U. and elsewhere, pharmaceutical sales are dependent in part on the availability and adequacy of reimbursement from third party payers such as governments and private insurance plans. Third party payers are increasingly challenging established prices, and new products that are more expensive than existing treatments may have difficulty finding ready acceptance unless there is a clear therapeutic benefit.

In the United States, consumer willingness to choose a self-administered outpatient prescription drug over a different drug or other form of treatment often depends on the manufacturer's success in placing the product on a health plan formulary or drug list, which results in lower out-of-pocket costs. Favorable formulary placement typically requires the product to be less expensive than what the health plan determines to be therapeutically equivalent products, and often requires manufacturers to offer rebates. Federal law also requires manufacturers to pay rebates to state Medicaid programs in order to have their products reimbursed by Medicaid. Medicare, which covers most Americans over age

65 and the disabled, adopted an insurance regime that offers eligible beneficiaries limited coverage for outpatient prescription drugs that became effective January 1, 2006. The prescription drugs that are covered under this insurance are specified on a formulary published by Medicare. As part of these changes, Medicare has adopted new payment formulas for prescription drugs administered by providers, such as hospitals or physicians that are generally expected to lower reimbursement.

The E.U. generally provides options for member states to restrict the range of medicinal products for which their national health insurance systems provide reimbursement. Member states can opt for a “positive” or “negative” list, with the former listing all covered medicinal products and the latter designating those excluded from coverage. The E.U., the U.K. and Spain have negative lists, while France uses a positive list. Canadian provinces establish their own reimbursement measures. In some countries, products may also be subject to clinical and cost effectiveness reviews by health technology assessment bodies. Negative determinations in relation to our products could affect prescribing practices. In the U.K., the National Institute for Clinical Excellence (“NICE”) provides such guidance to the National Health Service, and doctors are expected to take it into account when choosing drugs to prescribe. Health authorities may withhold funding from drugs not given a positive recommendation by NICE. A negative determination by NICE may mean fewer prescriptions. Although NICE considers drugs with orphan status, there is a degree of tension on the application of standard cost assessment for orphan drugs, which are often priced higher to compensate for a limited market. It is unclear whether NICE will adopt a more relaxed approach toward the assessment of orphan drugs.

We cannot assure you that any of our products will be considered cost effective, or that reimbursement will be available or sufficient to allow us to sell them competitively and profitably.

We could be subject to challenges under fraud and abuse laws.

The United States federal Medicare/Medicaid anti-kickback law and similar state laws prohibit remuneration intended to induce physicians or others either to refer patients, or to acquire or arrange for or recommend the acquisition of health care products or services. While the federal law applies only to referrals, products or services receiving federal reimbursement, state laws often apply regardless of whether federal funds are involved. Other federal and state laws prohibit anyone from presenting or causing to be presented false or fraudulent payment claims. Recent federal and state enforcement actions under these statutes have targeted sales and marketing activities of prescription drug manufacturers. As we begin to market our products to health care providers, the relationships we form, such as compensating physicians for speaking or consulting services, providing financial support for continuing medical education or research programs, and assisting customers with third-party reimbursement claims, could be challenged under these laws and lead to civil or criminal penalties, including the exclusion of our products from federally-funded reimbursement. Even an unsuccessful challenge could cause adverse publicity and be costly to respond to, and thus could have a material adverse effect on our business, results of operations and financial condition. We intend to consult counsel concerning the potential application of these and other laws to our business and to our sales, marketing and other activities to comply with them. Given their broad reach and the increasing attention given them by law enforcement authorities, however, we cannot assure you that some of our activities will not be challenged.

We do not have a guarantee of patent restoration and marketing exclusivity of the ingredients for our drugs even if we are granted FDA approval of our products.

The United States Drug Price Competition and Patent Term Restoration Act of 1984 (Hatch-Waxman) permits the FDA to approve Abbreviated New Drug Applications (“ANDAs”) for generic versions of innovator drugs, as well as NDAs with less original clinical data, and provides patent restoration and exclusivity protections to innovator drug manufacturers. The ANDA process permits competitor companies to obtain marketing approval for drugs with the same active ingredient and for the same uses as innovator drugs, but does not require the conduct and submission of clinical studies demonstrating safety and efficacy. As a result, a competitor could copy any of our drugs and only need to submit data demonstrating that the copy is bioequivalent to gain marketing approval from the FDA. Hatch-Waxman requires a competitor that submits an ANDA, or otherwise relies on safety and efficacy data for one of our drugs, to notify us and/or our business partners of potential infringement of our patent rights. We and/or our business partners may sue the company for patent infringement, which would result in a 30-month stay of approval of the competitor’s application. The discovery, trial and appeals process in such suits can take several years. If the litigation is resolved in favor of the generic applicant or the challenged patent expires during the 30-month period, the stay is lifted and the FDA may approve the application. Hatch-Waxman also allows competitors to market copies of innovator products by submitting significantly less clinical data outside the ANDA context. Such applications, known as “505(b)(2) NDAs” or “paper NDAs,” may rely on clinical investigations not conducted by or for the applicant and for which the applicant has not obtained a right of reference or use and are subject to the ANDA notification procedures described above.

The law also restores a portion of a product’s patent term that is lost during clinical development and NDA review, and provides statutory protection, known as exclusivity, against FDA approval or acceptance of certain competitor applications. Restoration can return up to five years of patent term for a patent covering a new product or its use to compensate for time lost during product development and regulatory review. The restoration period is generally one-half the time between the effective date of an IND and submission of an NDA, plus the time between NDA submission and its approval (subject to the five-year limit), and no extension can extend total patent life beyond 14 years after the drug approval date. Applications for patent term extension are subject to United States Patent and Trademark Office (“USPTO”) approval, in conjunction with FDA. Approval of these applications takes at least nine

months, and there can be no guarantee that it will be given at all.

Hatch-Waxman also provides for differing periods of statutory protection for new drugs approved under an NDA. Among the types of exclusivity are those for a “new molecular entity” and those for a new formulation or indication for a previously-approved drug. If granted, marketing exclusivity for the types of products that we are developing, which include only drugs with innovative changes to previously-approved products using the same active ingredient, would prohibit the FDA from approving an ANDA or 505(b)(2) NDA relying on safety and efficacy data for three years. This three-year exclusivity, however, covers only the innovation associated with the original NDA. It does not prohibit the FDA from approving applications for drugs with the same active ingredient but without our new innovative change. These marketing exclusivity protections do not prohibit the FDA from approving a full NDA, even if it contains the innovative change.

USE OF PROCEEDS

We estimate that the net proceeds to us from the sale of common shares to be offered by this prospectus supplement will be approximately $3,250,000, after deducting the estimated expenses of the closing. In addition, we may receive proceeds of up to $1,750,000 if all of the warrants are exercised for cash. Unless otherwise indicated, we intend to use the net proceeds from this offering for working capital and/or general corporate purposes, including to continue clinical trials, develop and commercialize products and general and administrative expenses.

Until we use the net proceeds of this offering for the above purposes, we intend to invest the funds in short-term, investment grade, interest-bearing securities. We cannot predict whether the proceeds invested will yield a favorable return. We have not yet determined the amount or timing of the expenditures for the categories listed above, and these expenditures may vary significantly depending on a variety of factors. As a result, we will retain broad discretion over the use of the net proceeds from this offering.

DIVIDEND POLICY

We have not paid dividends on our common stock in the past and have no present intention of paying dividends in the foreseeable future.

DESCRIPTION OF CAPITAL STOCK

In this offering, we are offering 1,688,782 shares of our common stock. The following description of certain terms of our capital stock does not purport to be complete and is qualified in its entirety by reference to our Articles of Incorporation, our bylaws and provision of the Nevada Revised Statute. For more information on how you can obtain our Articles of Incorporation and bylaws, see “Where You Can Find more Information.” We urge you to read our Articles of Incorporation and bylaws in their entirety.

Authorized Capital Stock

We are authorized to issue 100 million shares of common stock, par value $.001 per share, and 10 million shares of preferred stock, par value $.001 per share. At April 5, 2011, we had 26,379,729 shares of common stock outstanding and no shares of preferred stock outstanding. We are offering up to 1,688,782 shares of our common stock under the offering at a price of $2.0725 per unit. On April 5, 2011, the last reported sale price of our common stock on the NYSE AMEX LLC was $2.01 per share. Although our board of directors has no present intention to do so, it could issue common stock or a series of preferred stock that could, depending on the terms of such securities, impede the completion of a merger, tender offer or take-over attempt. Our board of directors will make any determination to issue such shares based upon its judgment and the best interests of us and our shareholders.

Common Stock

Our common stock currently trades on the NYSE AMEX under the symbol “AEN.” Holders of shares of common stock have the right to cast one vote for each share of common stock in their name on the books of our company, whether represented in person or by proxy, on all matters submitted to a vote of holders of common stock, including election of directors. There is no right to cumulative voting in election of directors. Except where a greater requirement is provided by statute, by our Articles of Incorporation, or by our bylaws, the presence, in person or by proxy duly authorized, of the one or more holders of a majority of the outstanding shares of our common stock constitutes a quorum for the transaction of business. The vote by the holders of a majority of outstanding shares is required to effect certain fundamental corporate changes such as liquidation, merger, or amendment of our Articles of Incorporation.

Except as otherwise provided by the Nevada Revised Statute or our Articles of Incorporation, holders of our common stock share ratably in all dividends and distributions, as may be declared form time to time by our board of directors from funds legally available therefore, whether upon liquidation or distribution or otherwise. There are no restrictions in our Articles of Incorporation or bylaws that prevent us from declaring dividends. The Nevada Revised Statute does, however, prohibit us from declaring dividends where, after giving effect to the distribution of the dividend (1) we would not be able to pay our debts as they become due in the usual course of business or (2) our total assets would be less than the sum of our total liabilities plus the amount that would be needed to satisfy the rights of stockholders who have preferential rights superior to those receiving the distribution.

We have not declared any dividends, and we do not plan to declare any dividends in the foreseeable future.

Holders of shares of our common stock are not entitled to preemptive or subscription or conversion rights, and no redemption or sinking fund provisions are applicable to our common stock. All outstanding shares of common stock are, and the shares of common stock sold in this offering will be when issued, fully paid and non-assessable.

Warrants

For each share of common stock purchased under the offering, each investor will receive one warrant to purchase up to 50% of one share of the Company's common stock at an exercise price of $2.0725 (the "Warrant Shares"). Thus, for example, if an investor purchases 1,000 shares of common stock, it will also receive a warrant to purchase up to 500 Warrant Shares. Each warrant will be exercisable at any time on or after the issuance date of the warrant and on or prior to the close of business on thirteen month anniversary of the issuance date. Each Warrant may be exercised in whole or in part during that period of time by delivering a duly executed notice of exercise form to us, along with the full exercise price within three days of such exercise.

In the event that there is no effective registration statement with respect to the Warrant Shares, then the warrants may also be exercised by means of a "cashless exercise." Upon full or partial exercise of any warrant, the applicable Warrant Shares shall be transmitted to the purchaser through the Depository Fast Automated Securities Transfer Program if our transfer agent is then a participant in such system. No fractional shares or scrip representing fractional shares shall be issued upon the exercise of any warrant. The exercise price of the warrants shall be adjusted in the event that the Company pays any stock dividend, subdivides outstanding shares of its common stock into a larger number of shares, or combines outstanding shares of its common stock into a smaller number of shares while any warrants are outstanding. The exercise price shall also be adjusted in the event we issue any shares of common stock or securities convertible into shares of common stock at a price below the exercise price to the price of the newly issued securities; however the exercise price shall not be adjusted below $1.40.

The warrants shall be transferable in whole or in part upon surrender thereof to us or our designated agent, together with a written assignment form and funds sufficient to pay any applicable transfer taxes. The warrants shall not entitle the holders thereof to any voting rights or dividend rights prior to the exercise thereof.

DILUTION

If you purchase our shares in this offering, your interest will be diluted to the extent of the difference between the public offering price per share and the net tangible book value per share of our common stock after this offering. Net tangible book value per share is determined by dividing our tangible book value (total tangible assets less total liabilities) by the number of outstanding shares of our common stock.

Our net tangible book value at December 31, 2010, was $3,400,286, or $(0.15) per share, based on 23,420,189 shares of our common stock outstanding as of that date. Net tangible book value per share is determined by dividing our net tangible book value, which consists of tangible net assets less total liabilities by the number of shares of our common stock outstanding on that date. Without taking into account any other changes in our net tangible book value after December 31, 2010, other than to give effect to our receipt of the estimated net proceeds from the January 2011 offering and the sale of 1,688,782 units at the offering price of $2.0725 per unit, less the placement fees and our estimated offering expenses, our net tangible book value as of December 31, 2010, after giving effect to the items above would have been approximately $10,390,286, or $0.37 per share. This represents an immediate increase in the net tangible book value of approximately $0.23 per share to existing stockholders and an immediate dilution of $0.37 per share to investors in this offering. The following table illustrates this per share dilution:

Public offering price per share		$2.0725
Net tangible book value per share as of December 31, 2010	$0.15	
Increase in net tangible book value per share attributable to this offering	$0.23	
Pro forma net tangible book value per share as of December 31, 2010 after giving effect to this offering		$0.37
Dilution in net tangible book value per share to new investors		$1.7025

If we were to sell all 1,688,782 of the shares and if the warrants to purchase all 844,391 Warrant Shares were exercised for cash at the exercise price of $2.0725 per share, our net tangible book value as of December 31, 2010, would have been approximately $14,997,430 or $0.50 per share. This represents an immediate increase in the net tangible book value of approximately $0.35 to existing stockholders and an immediate dilution of $0.50 per Warrant Share to the exercising Warrant holders. The following table illustrates this per share dilution:

Exercise price of warrants		$2.0725
Net tangible book value per share as of December 31, 2010	$0.15	
Increase in net tangible book value per share attributable to the exercise of warrants	$0.35	
Pro forma net tangible book value per share as of December 31, 2010 after giving effect to the exercise of warrants		$0.50
Dilution in net tangible book value per warrant share to warrant holders		$1.5725

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Corporate Stock Transfer, Inc. of Denver, Colorado.

Listing

Our common stock is listed on the American Stock Exchange under the symbol “AEN.”

PLAN OF DISTRIBUTION

Pursuant to a letter agreement between us and Chardan Capital Markets, LLC (“Chardan”), we have retained Chardan to act as our placement agent in connection with this offering. The placement agent is not purchasing or selling any of the securities we are offering and is not required to arrange the purchase or sale of any specific number of securities or dollar amount, but Chardan has agreed to use best efforts to arrange for the sale of the securities. The placement agency agreement does not give rise to any commitment by the placement agent to purchase any of our securities, and the placement agent will have no authority to bind us by virtue of the placement agency agreement.

The placement agent proposes to arrange for the sale of the units we are offering pursuant to this prospectus supplement to one or more investors through a securities purchase agreement directly between the purchasers and us. All of the shares will be sold at the same price and, we expect, at a single closing. We established the price following negotiations with prospective investors and with reference to the prevailing market price of our common stock, recent trends in such price and other factors. It is possible that not all of the units we are offering pursuant to this prospectus supplement will be sold at the closing, in which case our net proceeds would be reduced. We expect that the sale of the units will be completed on the date indicated on the cover page of this prospectus supplement. We will deliver the shares in the units to the investors electronically through the facilities of the Depository Trust Company and the warrants in the units in certificated form to the investors within 5 trading days of the closing.

In connection with this offering, the placement agent may distribute this prospectus supplement and the accompanying prospectus electronically.

We have agreed to indemnify the placement agent against certain liabilities, including liabilities arising from breaches and representations and warranties contained in the securities purchase agreements with investors.

The engagement agreement, as amended, is included as an exhibit to our Current Report on Form 8-K that we will file with the SEC in connection with this offering.

The placement agent has informed us that it will not engage in over-allotment, stabilizing transactions or syndicate covering transactions in connection with this offering.

The placement agent and its affiliates have provided and may in the future provide certain commercial banking, financial advisory or investment banking services for us for which it has received and may in the future receive fees but there are no current arrangements between us.

We have agreed to pay Chardan a cash fee representing 6% of the gross purchase price paid for the Shares at the closing for an aggregate of $210,000 assuming all of the units offered hereby are actually sold. We have also agreed to pay Chardan an additional $5,000 for legal fees incurred by it.

We estimate the total expenses of this offering which will be payable by us, excluding the placement agent fees, will be approximately $35,000. After deducting the fees due to the placement agent and our estimated offering expenses,

we expect the net proceeds from this offering to be approximately $3,250,000.

This is a brief summary of the material provisions of the Agreement and does not purport to be a complete statement of its terms and conditions. A copy of the Agreement will be filed with the SEC and incorporated by reference into the registration statement of which this prospectus supplement forms a part. See "Where You Can Find More Information" below.

LEGAL MATTERS

Certain legal matters pertaining to the validity of the securities being offered hereby will be passed on by Gracin & Marlow, LLP, 405 Lexington Avenue, 26th Floor, New York, New York 10174.

EXPERTS

The audited financial statements for the fiscal years ended December 31, 2010 and 2009 incorporated in this prospectus supplement, the accompanying prospectus and elsewhere in the registration statement by reference to the Annual Report on Form 10-K for the year ended December 31, 2010 have been audited by Berman & Company, P.A., an independent registered public accounting firm as stated in their report which is incorporated herein by reference.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and special reports, proxy statements and other information with the Securities and Exchange Commission. You may read and copy any document we file at the Commission's public reference room located at 100 F Street N.E., Washington, D.C. 20549. Please call the Commission at 1-800-SEC-0330 for further information on the operation of the public reference room. Our public filings are also available to the public at the Commission's web site at http://www.sec.gov.

This prospectus supplement is part of a registration statement on Form S-3 that we have filed with the Commission under the Securities Act. This prospectus supplement does not contain all of the information in the registration statement. We have omitted certain parts of the registration statement, as permitted by the rules and regulations of the Commission. You may inspect and copy the registration statement, including exhibits, at the Commission's public reference room or Internet site.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The Commission allows us to "incorporate by reference" the information we file with it which means that we can disclose important information to you by referring you to those documents instead of having to repeat the information in this prospectus supplement. The information incorporated by reference is considered to be part of this prospectus supplement, and later information that we file with the Commission will automatically update and supersede this information. We incorporate by reference the documents listed below and any future filings made with the Commission under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act between the date of this prospectus supplement and the termination of the offering:

Our annual report on Form 10-K for the fiscal year ended December 31, 2010 filed with the Securities and Exchange Commission on March 31, 2011.

The description of our common stock set forth in our registration statement on Form 8-A, filed with the Commission on January 29, 1993 (File No. 000-21156).

Our Current Report on Form 8-K filed with the Securities and Exchange Commission on January 10, 2011

Our Prospectus Supplement on Form 425B5 filed with the Securities and Exchange Commission on February 2, 2011

Our Current Report on Form 8-K filed with the Securities and Exchange Commission on February 2, 2011

Our Current Report on Form 8-K filed with the Securities and Exchange Commission on March 31, 2011

You may obtain, free of charge, a copy of any of these documents (other than exhibits to these documents unless the exhibits are specifically incorporated by reference into these documents or referred to in this prospectus) by writing or calling us at the following address and telephone number:

ADEONA PHARMACEUTICALS, INC.
3985 Research Park Drive, Suite 200
Ann Arbor, MI 48108
Attention: Corporate Secretary
(734) 332-7800

PROSPECTUS

$15,000,000
Common Stock
Warrants
Units

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission using a "shelf" registration process. Under this shelf registration process, we may offer, issue and sell, separately, together or as units shares of our common stock and/or warrants to purchase any of such securities, in one or more offerings, with a total value of up to $15 million. This prospectus provides you with a general description of the securities we may offer. Each time we offer a type or series of securities under this prospectus, we will provide a prospectus supplement that will contain more specific information about the terms of those securities. However, in no event will we sell securities with a value exceeding more than one-third of our public float (the market value of our common stock held by non-affiliates) in any 12 month period.

As of May 3, 2010 the aggregate market value of our outstanding common stock held by non-affiliates is approximately $29,903,948, based on 21,698,945 shares of outstanding common stock, of which approximately 13,817,311 shares are held by non-affiliates, and a per share price of $1.73 based on the closing sale price of our common stock on May 3, 2010. We have not offered any securities during the past twelve months pursuant to General Instruction I.B.6 of Form S-3.

We may also add, update or change in a prospectus supplement any of the information contained in this prospectus or in documents we have incorporated by reference in this prospectus. You should carefully read this prospectus and the prospectus supplements relating to the specific issue of securities together with additional information described under the heading "Where You Can Find More Information," beginning on Page 14 of this prospectus, before you decide to invest in any of these securities.

Our common stock is traded on The American Stock Exchange under the symbol "AEN." On May 3, 2010, the last reported sale price for the common stock was $1.73 per share. We may sell the securities offered hereby to or through underwriters and also to other purchasers or agents. We will set forth the names of any underwriters or agents in the applicable supplement. The prospectus supplement will also describe in detail the plan of distribution for that offering. For general information about the distribution of the securities offered see "Plan of Distribution" in this prospectus.

This prospectus may not be used to sell securities unless it is accompanied by a prospectus supplement.

Our executive offices are located at 3985 Varsity Drive, Ann Arbor, Michigan 48108. Our telephone number is (734) 332-7800.

Investing in our common stock involves risks. Risks associated with an investment in our common stock will be described in the applicable prospectus supplement and certain of our filings with the Securities and Exchange Commission, as described in "Risk Factors" on page 11.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR DETERMINED IF THIS

PROSPECTUS IS TRUTHFUL OR COMPLETE. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

The date of this prospectus is June 14, 2010

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The registration statement containing this prospectus, including the exhibits to the registration statement, provides additional information about us and the common stock offered under this prospectus. The registration statement, including the exhibits and the documents incorporated herein by reference, can be read on the Securities and Exchange Commission website or at the Securities and Exchange Commission offices mentioned under the heading “Where You Can Find More Information.”

ABOUT THIS PROSPECTUS

This prospectus is a part of a registration statement that we filed with the Securities and Exchange Commission utilizing a "shelf-registration process." Under this shelf registration process, we may, from time to time, sell up to $15 million of our common stock and warrant separately, together or as units in one or more offerings as described in this prospectus. However, in no event will we sell securities with a value exceeding more than one-third of our "public float" (the market value of our common stock held by non-affiliates) in any 12 month period. This prospectus provides you with a general description of the securities we may offer. Each time we sell securities under this shelf registration, we will provide a prospectus supplement that will contain specific information about the terms of that offering and the manner in which securities will be offered, including the specific amount, price and terms of the securities offered. The prospectus supplement may also add, update or change information contained in this prospectus. You should read both this prospectus and any prospectus supplement together with additional information described under "Where You Can Find More Information."

We have not authorized any dealer, salesman or other person to give any information or to make any representation other than those contained or incorporated by reference in this prospectus and the accompanying supplement to this prospectus. You must not rely upon any information or representation not contained or incorporated by reference in this prospectus or the accompanying prospectus supplement. This prospectus and the accompanying supplement to this prospectus do not constitute an offer to sell or the solicitation of an offer to buy any securities other than the registered securities to which they relate, nor do this prospectus and the accompanying supplement to this prospectus constitute an offer to sell or the solicitation of an offer to buy securities in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction. You should not assume that the information contained in this prospectus and the accompanying prospectus supplement is accurate on any date subsequent to the date set forth on the front of the document or that any information we have incorporated by reference is correct on any date subsequent to the date of the document incorporated by reference, even though this prospectus and any accompanying prospectus supplement is delivered or shares of common stock are sold on a later date.

ABOUT ADEONA PHARMACEUTICALS, INC.

In this prospectus, "Adeona Pharmaceuticals," "Adeona" "we," "us," and "our" refer to Adeona Pharmaceuticals, Inc., a Neva corporation and each of its subsidiaries, considered as a single enterprise. .

Adeona Pharmaceuticals, Inc., a Nevada corporation, ("Adeona" or the "Company") is a pharmaceutical company developing new medicines for serious central nervous systems diseases. Adeona's primary strategy is to in-license clinical-stage drug candidates that have already demonstrated a certain level of clinical efficacy and develop them further to either commercialization or a development collaboration.

Trimesta (estriol) is an investigational oral drug for the treatment of relapsing remitting multiple sclerosis. A 150-patient, 16-center, randomized, double-blind, placebo-controlled clinical trial is currently underway. Effirma (flupirtine) is a novel centrally-acting investigational oral drug for the treatment of fibromyalgia syndrome. We recently entered into a sublicense agreement with Meda AB pursuant to which we granted an exclusive license to all of our patents covering the use of flupirtine for fibromyalgia. Zinthionein ZC (zinc cysteine) is an oral, gastro-retentive, sustained-release medical food candidate being developed for the dietary management of Alzheimer's disease and mild cognitive impairment. In December of 2009, Adeona initiated a 60-patient clinical study.dnaJP1 (hsp peptide) is an investigational oral drug for the treatment of rheumatoid arthritis. It has completed a 160-patient, multi-center, randomized, double-blind, placebo-controlled clinical trial. ZincMonoCysteine (zinc-monocysteine) is an investigational oral drug for the treatment of dry age-related macular degeneration. It has completed an 80-patient, randomized, double-blind, placebo-controlled clinical trial.

Below is a table of Adeona's product candidates, their medical indication(s) and their stage of development:

Program	Medical Indication	Stage of Development
Trimesta (estriol)	Treatment of relapsing remitting multiple sclerosis in women	10-patient, 22-month, single-agent, crossover clinical trial completed, and a 150-patient, 16-center, randomized, double-blind, placebo-controlled clinical trial underway
Effirma (flupirtine)	Treatment of fibromyalgia	IND approved and IRB reviewed for 90-patient clinical trial

Program	Medical Indication	Stage of Development
Zinthionein ZC (zinc cysteine)	Dietary management of Alzheimer's disease and mild cognitive impairment	60-patient, randomized, double-blind, placebo-controlled clinical study underway
dnaJP1 (hsp peptide)	Treatment of rheumatoid arthritis	160-patient, multi-center, randomized, double-blind, placebo-controlled clinical trial completed
ZincMonoCysteine (zinc-monocysteine)	Treatment of dry age-related macular degeneration	80-patient, randomized, double-blind, placebo-controlled clinical trial completed

Through our HartLab clinical reference laboratory, serum-based diagnostic tests are being commercialized including the CopperProof TM Panel to assist physicians in identifying patients with zinc deficiency and patients at increased risk of chronic copper toxicity due to impaired serum copper binding.

In addition, we are seeking United States, European and Asian corporate partners for the further development of the investigational CD4 inhibitor 802-2 (cyclic heptapeptide) for prevention of severe graft-versus-host disease and oral tetrathiomolybate drug for treating Alzheimer's disease, Parkinson's disease and Huntington's disease.

Product Candidates

Trimesta

Trimesta (estriol) is an investigational oral drug for the treatment of relapsing remitting multiple sclerosis. Estriol has been approved and marketed for over 40 years throughout Europe and Asia for the treatment of post-menopausal hot flashes. It has never been approved by the Food and Drug Administration for any indication. Estriol is a hormone that is produced by the placenta during pregnancy. Maternal levels of estriol increase in a linear fashion throughout the third trimester of pregnancy until birth, whereupon they abruptly fall to near zero.

It has been scientifically documented that pregnant women with certain autoimmune diseases experience a spontaneous reduction of disease symptoms during pregnancy, especially in the third trimester. The list of autoimmune diseases that have been seen to improve during pregnancy includes multiple sclerosis, rheumatoid arthritis, thyroiditis, uveitis, juvenile rheumatoid arthritis, ankylosing spondylitis with peripheral arthritis, and psoriatic arthritis. It has further been scientifically documented that these same pregnant women have high rates of disease relapse post-partum, particularly in the immediate three-month post-partum period.

The PRIMS study (Pregnancy in Multiple Sclerosis), a landmark clinical study published in the New England Journal of Medicine , followed 254 women with multiple sclerosis during 269 pregnancies and for up to one year after delivery. The PRIMS study demonstrated that relapse rates were significantly reduced by 71 percent ($p < 0.001$) through the third trimester of pregnancy from pre-baseline levels and relapse rates then increased by 120 percent ($p < 0.001$) during the first three months post-partum before returning to pre-pregnancy rates.

The inventor of Trimesta has conducted scientific research on the role that estriol plays in creating immunologic privilege to the fetus in order to prevent its rejection by the mother. She believes that estriol's immunomodulatory and anti-inflammatory properties may explain the remissions seen in certain Th1-mediated autoimmune diseases during pregnancy. Based upon these insights, this scientist has conducted clinical trials of Trimesta in female patients with relapsing-remitting multiple sclerosis.

Clinical Trial Results of Trimesta in Relapsing Remitting Multiple Sclerosis Patients

An investigator-initiated, 10-patient, 22-month, single-agent, crossover clinical trial was completed in the United States to study the therapeutic effects of 8 mg of Trimesta daily in nonpregnant female relapsing remitting multiple sclerosis patients. The total volume and number of gadolinium-enhancing lesions was measured by monthly brain magnetic resonance imaging (an established neuroimaging measurement of disease activity in multiple sclerosis) over a six-month pre-treatment period to establish a baseline measurement. Over the next three months of treatment with Trimesta, the median total enhancing lesion volumes decreased by 79% ($p = 0.02$) and the number of lesions decreased by 82% ($p = 0.09$). They remained decreased during the next 3 months of treatment, with lesion volumes decreased by 82% ($p = 0.01$), and numbers decreased by 82% ($p = 0.02$). Following a six-month drug holiday during which the patients were not on any drug therapies, median lesion volumes and numbers returned to near baseline pretreatment levels Trimesta therapy was reinitiated during a four-month retreatment phase of this clinical trial. The relapsingremitting multiple sclerosis patients again demonstrated a decrease in enhancing lesion volumes of 88% ($p = 0.008$) and a decrease in the number of lesions by 48% ($p = 0.04$) compared with original baseline scores.

During this clinical trial, a 14-percent improvement in Paced Auditory Serial Addition Test (PASAT) cognitive testing scores ($p = 0.04$) was also observed in the multiple sclerosis patients at six months of therapy. PASAT is a routine cognitive test performed in patients with a wide variety of neuropsychological disorders such as multiple sclerosis. The PASAT scores were expressed as a mean percent change from baseline and were significantly improved in the relapsing-remitting group. The study investigators concluded that a larger, placebo-controlled clinical trial of Trimesta is warranted in women with relapsing remitting multiple sclerosis. In addition, they added that this novel treatment strategy of using Trimesta in multiple sclerosis has relevance to other autoimmune diseases that also improve during pregnancy.

Clinical Trial Currently Underway of Trimesta in Relapsing Remitting Multiple Sclerosis Patients

In March of 2007, an investigator-initiated, randomized, double-blind, placebo-controlled, 150-patient clinical trial was started at 7 clinical centers in the United States. The purpose of this clinical trial is to study whether 8 mg of Trimesta daily over a 2 year period would reduce the rate of relapses in a large population of female patients with relapsing remitting multiple sclerosis. Investigators are administering either Trimesta along with glatimer acetate (Copaxone®) injections, a Food and Drug Administration-approved therapy for multiple sclerosis, or a placebo plus glatimer acetate injections to women between the ages of 18 to 50 who have been recently diagnosed with relapsingremitting multiple sclerosis. The primary endpoint is relapse rates at two years with a one year interim analysis using standard clinical measures of multiple sclerosis disability. Secondary endpoints of magnetic resonance imaging measurements of brain lesion and effects on cognition will also be studied. In January of 2010, it was announced that an additional $860,440 in grant funding had been received allowing the number of clinical sites enrolling patients to increase to 16 clinical sites. Currently, over 75 of 150 patients have been enrolled in this clinical study.

Trimesta Grant Funding

The preclinical and clinical development of Trimesta has been primarily financed by a $5 million grant from the National Multiple Sclerosis Society in partnership with the National Multiple Sclerosis Society's Southern California chapter, with support from the National Institutes of Health. In January of 2010, it was announced that an additional $860,440 in grant funding had been received through the American Recovery and Reinvestment Act allowing the number of clinical sites currently enrolling patients in the clinical study to increase from 7 clinical sites to 16. The rate of enrollment in the clinical trial has been positively impacted through the addition of the 9 new clinical sites.

Trimesta Market Opportunity

Multiple sclerosis is a progressive neurological disease in which the body loses the ability to transmit messages along central nervous system nerve cells, leading to a loss of muscle control, paralysis, and, in some cases, death. According to the National Multiple Sclerosis Society, currently, more than 2.5 million people worldwide (approximately 400,000 patients in the United States), mainly young adults aged 20-50, are afflicted with multiple sclerosis and two to three times as many women are affected than men. Relapsing remitting multiple sclerosis is the most common disease course at the time of diagnosis according to the National Multiple Sclerosis Society. Approximately, 85% of people with multiple sclerosis are initially diagnosed with the relapsing remitting form, compared to 10-15% with progressive forms.

Multiple sclerosis costs the United States more than $9.5 billion annually in medical care and lost productivity according to the Society for Neuroscience. The average annual cost of multiple sclerosis is approximately $44,000 to $95,625 per person. These figures include lost wages and healthcare costs (care giving, hospital and physician costs, pharmaceutical therapy and nursing home care). The cost of treating patients with later-stage progressive forms of multiple sclerosis is approximately $65,000 per year per person.

There are currently 7 Food and Drug Administration-approved therapies for the treatment of relapsing-remitting multiple sclerosis: Betaseron®, Rebif®, Avonex®, Novantrone®, Copaxone®, Tysabri® and Ampyra TM. These therapies provide only a modest benefit for patients with relapsing-remitting multiple sclerosis and therefore serve to only delay progression of the disease. All of these drugs except Ampyra™ require frequent (daily, weekly & monthly) injections (or infusions) on an ongoing basis and are associated with unpleasant side effects (such as flu-like symptoms), high rates of non-compliance among users, and eventual loss of efficacy due to the appearance of resistance in approximately 30% of patients.

Effirma

Effirma (flupirtine) is a centrally-acting investigational oral drug for the treatment of fibromyalgia syndrome. It is a selective neuronal potassium channel opener that also has NMDA receptor antagonist properties. Flupirtine is a non-opioid, non-NSAID, non-steroidal, analgesic. Flupirtine was originally developed by Asta Medica and has been approved in Europe since 1984 for the treatment of pain, although it has never been introduced to the United States market for any indication.

Preclinical data and clinical experience suggest that Effirma should also be effective for neuropathic pain since it acts in the central nervous system via a mechanism of action distinguishable from most marketed analgesics. Effirma is especially attractive because it operates through non-opiate pain pathways, exhibits no known abuse potential, and lacks withdrawal effects. In addition, no tolerance to its antinocioceptive effects has been observed. One common link between neuroprotection, nocioception, and Effirma may be the N-methyl-D-aspartic acid glutamate system, a major receptor subtype for the excitotoxic neurotransmitter, glutamate. Effirma has strong inhibitory actions on N-methyl-D-aspartic acid-mediated neurotransmission.

Effirma Clinical Trial Status

Adeona's scientific collaborator has demonstrated preliminary encouraging evidence of clinical efficacy in a small number of patients treated with Effirma whom were suffering from fibromyalgia refractory to other analgesics and therapies. Effirma was well tolerated by these patients with no untoward side effects. In addition, substantial improvement in signs and symptoms was demonstrated in this difficult-to-treat fibromyalgia patient population. Adeona's scientific collaborator filed an investigator-initiated Investigational New Drug with the Food and Drug Administration to test flupirtine in a clinical trial of 90 fibromyalgia patients. During 2008, this proposed clinical trial and Investigational New Drug was approved by the Food and Drug Administration. Additionally, this protocol has been reviewed by an institutional review board.

Effirma Sublicense

In May of 2010, Adeona and its wholly owned subsidiary, Pipex Therapeutics, Inc.("Pipex") entered into a Sublicense Agreement (the "Agreement") pursuant to Pipexgranted Meda AB ("Meda") an exclusive sublicense to all of its patents covering the use of flupirtine for fibromyalgia. The Agreement provides that the Meda will assume all future development costs for the commercialization of flupirtine for fibromyalgia. As consideration for such sublicense, Pipex received an up-front payment of $2.5 million upon execution of the Agreement and are entitled to milestone payments of $5 million upon filing of a New Drug Application with the Food and Drug Administration for flupirtine for fibromyalgia and $10 million upon marketing approval. The Agreement also provides that Pipex is entitled to receive royalties of 7% of net sales of flupirtine approved for the treatment of fibromyalgia covered by issued patent claims in the Territory. Pursuant to the terms of Pipex's agreement with the company's university licensor, Adeona is obligated to share half of the royalties we receive with the company's university licensor.

Effirma Market Opportunity

Fibromyalgia is a chronic and debilitating condition characterized by widespread pain and stiffness throughout the body, accompanied by severe fatigue, insomnia and mood symptoms. Fibromyalgia affects an estimated 2-4% of the population worldwide, including an estimated 4 million patients in the United States. There are presently three products approved for this indication in the United States – Lyrica, Cymbalta and Savella. Flupirtine is differentiated from these products in that it employs a unique mode of action. Meda estimates the United States market for fibromyalgia to be near $1 billion at the time of potential launch of flupirtine.

Zinthionein ZC

Zinthionein ZC is an investigational once-daily, gastroretentive, sustained-release, proprietary, oral tablet formulation of zinc and cysteine for the dietary management of Alzheimer's disease and mild cognitive impairment. It is being developed as a prescription medical food. All of Zinthionein ZC's constituents have GRAS (Generally Regarded as Safe) status. Zinthionein ZC was specially invented and developed by Adeona to achieve the convenience of once-daily dosing, high bioavailability and to minimize gastrointestinal side effects of oral zinc therapy. Zinthionein ZC is protected by multiple U.S. and international pending patent applications held by Adeona.

In April of 2010, Adeona announced positive results of Part 1 of its CopperProof-2 clinical study of Zinthionein ZC (zinc cysteine) in Alzheimer's disease and mild cognitive impairment. Adeona's CopperProof-2 clinical study seeks to compare Zinthionein ZC to placebo, as well as a currently marketed prescription zinc product, Galzin® (zinc acetate). The clinical study, "A Prospective, Randomized, Double Blind Trial of a Novel Oral Zinc Cysteine Preparation in Alzheimer's Disease (CopperProof-2)" previously received institutional review board approval to proceed. The principal investigator of the study is Diana Pollock, M.D., Associate Director, Memory Disorder Center, Clearwater, Florida.

CopperProof-2 is designed as a controlled, 60-patient, randomized, double-blind, placebo-controlled clinical study and is divided into two parts. Part 1, recently completed, is a 13-subject, three-arm, single-dose, comparator study in Alzheimer's disease and mild cognitive impairment subjects that compared the tolerability and bioavailability of Zinthionein ZC to Galzin®, the only Food and Drug Administration-approved zinc preparation and placebo. The Galzin® arm tested two separate individual dose levels, 50 mg and 100 mg zinc acetate (two 50 mg doses taken together). Part 2 of the study has 60 Alzheimer's disease and mild cognitive impairment subjects randomized to receive either once-daily Zinthionein ZC or matching placebo for six months.

Results

Tolerability

Results from Part 1 of the study, announced today, demonstrate a substantially lower incidence of adverse effects in Alzheimer's disease and mild cognitive impairment subjects (33% versus 100%) in favor of Zinthionein ZC (containing 150 mg of elemental zinc acetate and 100 mg of cysteine) compared to Galzin® (containing either 50 mg or 100 mg of elemental zinc as zinc acetate). 100% of the Galzin® subjects experienced gastrointestinal distress, ranging from 100% nausea to 40% vomiting, 40% diarrhea, and 20% heartburn. The high rate of gastrointestinal adverse effects of Galzin® are consistent with prior published results of oral zinc therapy. In comparison, only 33% of Zinthionein ZC subjects experienced nausea, with only one of such subjects (17% of group) having experienced vomiting. No adverse effects were noted in the placebo group.

Adverse effects for the three groups are as follows:

	Placebo		Galzin 100 mg		Galzin 50 mg		Galzin All		Zinthionein ZC 150 mg	
Any Adverse Effect	(0/2)	0%	(3/3)	100%	(2/2)	100%	(5/5)	100%	(2/6)	33%
Nausea	(0/2)	0%	(3/3)	100%	(2/2)	100%	(5/5)	100%	(2/6)	33%
Vomiting	(0/2)	0%	(1/3)	33%	(1/2)	50%	(2/5)	40%	(1/6)	17%
Diarrhea	(0/2)	0%	(1/3)	33%	(1/2)	50%	(2/5)	40%	(0/6)	0%
Dizziness	(0/2)	0%	(0/3)	0%	(0/2)	0%	(0/5)	0%	(0/6)	0%
Abdominal Pain	(0/2)	0%	(0/3)	0%	(0/2)	0%	(0/5)	0%	(1/6)	17%
Heartburn	(0/2)	0%	(0/3)	0%	(1/2)	50%	(1/5)	20%	(0/6)	0%

Bioavailability

Zinthionein ZC also demonstrated superior serum zinc bioavailability in Alzheimer's disease and mild cognitive impairment subjects compared to both the 50 mg and 100 mg dose levels of Galzin®. Average baseline serum zinc levels of the subjects was 76.8 microg/dL (range: 63-92 microg/dL), consistent with Adeona's earlier findings of a subclinical zinc deficiency in Alzheimer's disease patients. The area under the curve (a serum measurement of bioavailability) of Zinthionein ZC was approximately 166% that of the 50 mg Galzin® dose and 116% that of 100 mg Galzin® dose (two 50 mg doses taken together).

The bioavailability results are also supplemented from results of a separate uncontrolled repeat dose pilot study conducted by Adeona in a small number of normal subjects who took Zinthionein ZC once-daily for 14 weeks, also being announced today. Following 14 weeks, subjects demonstrated an average 80% increase in serum zinc levels from baseline measured at least 12 hours after last dose, demonstrating Zinthionein ZC's ability to maintain consistently elevated serum zinc levels. In addition, a 17% reduction in serum copper levels was observed after 14 weeks, demonstrating Zinthionein ZC's ability to favorably improve serum copper/zinc ratios with once-daily dosing.

Part 2 of the Clinical Study

Part 2 of the clinical study is intended to enroll 60 Alzheimer's disease and mild cognitive impairment subjects and is currently ongoing with 11 of 13 enrolled subjects from Part 1 electing to continue to Part 2 of the study. In Part 2, subjects are randomized on a 50:50 basis to either Zinthionein ZC or matching placebo. Subjects will be assessed at 3 and 6 months for serum parameters of zinc and copper as well as changes in cognitive function using standard clinical tests used in Alzheimer's disease and mild cognitive impairment. Some subjects have now completed three months of therapy. Adeona recently added two additional clinical sites in Florida to further expedite enrollment and complete Part 2 of the study.

Background of Zinc Therapy for Alzheimer's Disease and Mild Cognitive Impairment

The CopperProof-2 study grew out of observations by Adeona and now others documenting a subclinical zinc deficiency in Alzheimer's disease patients as well as a significant body of published evidence implicating chronic copper exposure and elevated free serum copper levels in the progression of Alzheimer's disease and mild cognitive impairment. In 1992, results from an uncontrolled study of zinc therapy in Alzheimer's disease was reported to demonstrate cognitive improvement in 80% of subjects in as little as 3 to 6 months of treatment. Due to the significant gastrointestinal side effects and intolerability of oral zinc therapy in such study, oral zinc therapy was discontinued and subjects were switched to zinc injections administered every other day, further underscoring the need for a better tolerated, convenient oral zinc therapy such as Zinthionein ZC.

The hippocampus, an area of the brain that plays a critical role in short-term memory and is generally most affected in Alzheimer's disease, is believed to contain the highest levels of zinc in the brain. Hippocampal zinc is believed to play an important dual role as a synaptic neurotransmitter that modulates NMDA (N-methyl-D-aspartic acid) receptor activity limiting excitotoxicity and is a key component of hundreds of neuroprotective enzymes, a number of which are responsible for the degradation of amyloid beta. Alzheimer's disease subjects have been reported to have lower levels of zinc in their cerebral spinal fluid, and cerebral spinal fluid levels of copper and zinc highly correlate with levels of amyloid beta 42 in cerebral spinal fluid, a biomarker of Alzheimer's disease. Zinc's role as an important NMDA receptor antagonist implies that by ameliorating the cerebral spinal fluid zinc deficiency in Alzheimer's disease patients, Zinthionein ZC may demonstrate near term acute cognitive benefits, such as those demonstrated in the 1992 study described above, as well as reducing neurogeneration in the longer term. Current NMDA-receptor antagonists for Alzheimer's disease, such as Namenda® and Axura® (memantine), currently have estimated annualized sales of $2.6 billion.

dnaJP1

dnaJP1 (hsp peptide) is an investigational oral drug for the treatment of rheumatoid arthritis. It has completed a 160-patient, multi-center, randomized, double-blind, placebo-controlled clinical trial for the treatment of rheumatoid arthritis. dnaJP1 is an epitope-specific immunotherapy for rheumatoid arthritis patients. It is a 15-mer heat shock protein-derived peptide that was previously identified as a contributor of T cell-mediated inflammation in rheumatoid arthritis. Immune responses to heat shock protein are often found at sites of inflammation and have an initially amplifying effect that needs to be down regulated to prevent tissue damage. The mechanisms for this regulation involve T cells with regulatory function that are specific for heat shock protein-derived antigens. This regulatory function is one of the key components of a "molecular dimmer" whose physiologic function is to modulate inflammation independently from its trigger. This function is impaired in autoimmunity and could be restored for therapeutic purposes.

dnaJP1 contains the five amino acid cassette present on most of the HLA (human leukocyte antigen) class II alleles associated with rheumatoid arthritis. In preclinical work, the most relevant epitope was mapped and showed its contribution to pro-inflammatory T cell responses in vitro in patients with active rheumatoid arthritis. These data led to the hypothesis that the sequences shared between immunologically relevant self and foreign proteins (HLA and heat shock protein) would affect thymic selection and peripheral activation of potentially pathogenic T cells at different stages. The mechanistic hypothesis is that mucosal tolerization to dnaJP1 could determine immune tolerization primarily of T cells and secondarily of antigen presenting cells. The effects of immune tolerance are initially peptide-specific but affect secondarily non-epitope specific pathways.

Computer-aided, rational drug design techniques of dnaJP1 resulted in a short synthetic peptide derived from a heat shock protein dnaJ. Heat shock proteins and dnaJ are upregulated during cellular stress, including inflammation and autoimmune diseases. Heat shock protein responses have been found in several other autoimmune diseases other than

rheumatoid arthritis, including juvenile idiopathic arthritis, multiple sclerosis, and inflammatory bowel disease. The mechanism of action of dnaJP1 relies on selectively inducing an immune shift of a T-cell function from inflammatory to regulatory, thus inhibiting disease-related inflammation and inducing a tolerogenic immunologic response.

Adeona is currently engaged in the cGMP manufacture and scale up of the dnaJP1 active drug substance and other nonclinical activities necessary to support the potential filing and approval of a corporate investigational new drug application for the further clinical testing of dnaJP1. The Company is seeking potential United States, European and Asian corporate partners to assist in the further manufacturing, testing and clinical development of dnaJP1.

Clinical Trial Results of dnaJP1 in Rheumatoid Arthritis Patients

In November of 2009, Adeona announced publication of the results of an investigator-initiated, 160-patient clinical trial of dnaJP1 for the treatment of rheumatoid arthritis conducted at 11clinical centers in the United States. The publication, entitled "Epitope-Specific Immunotherapy of Rheumatoid Arthritis: Clinical Responsiveness Occurs With Immune Deviation and Relies on the Expression of a Cluster of Molecules Associated with T Cell Tolerance in a Double-Blind, Placebo-Controlled, Pilot Phase II Trial", can be found in Arthritis & Rheumatism , Vol. 60(11), pages 3207-3216, with related editorial at page A21. This clinical trial was funded by a $5 million grant from the National Institutes of Health. It sought to test 2 hypotheses 1) whether mucosal induction of immune tolerate to dnaJP1 would lead to a qualitative change from a proinflammatory phenotype to a more tolerogenic functional phenotype and 2) whether immune deviation of responses to an inflammatory epitope might translate into clinical improvement. One hundred sixty patients with active rheumatoid arthritis were randomized to receive oral doses of 25 mg of dnaJP1 or placebo daily for 6 months.

Results of the published study showed the following:

1. dnaJP1 appeared to be safe and well-tolerated;

2. There was a significant reduction in the percentage of T cells producing the proinflammatory cytokine tumor necrosis factor alpha (TNF-alpha) ($p < 0.0007$);

3. The primary efficacy end point (meeting the American College of Rheumatology 20% improvement criteria at least once on day 112, 140, or 168) showed a difference between treatment groups ($p = 0.09$) that became significant in post hoc analysis using generalized estimating equations (GEE) ($p = 0.04$).

4. Differences in clinical responses were also found between treatment groups on day 140 and at followup, indicative of a durable response following discontinuation of therapy.

5. Post hoc analysis showed that the combination of dnaJP1 and the commercially available rheumatoid arthritis agent, hydroxychloroquine, was superior to the combination of hydroxychloroquine and placebo, demonstrating potential synergistic effect of dnaJP1 with hydroxychloroquine.

Consistent with the disease modifying process of active immune tolerization, there was a progressive separation between treatment and placebo groups for both ACR20 and ACR50 endpoints after day 112. ACR20 is a composite endpoint developed the American College of Rheumatology and generally accepted as an FDA-approvable scoring criteria. dnaJP1 treated patients achieved a 40.7% ACR20 response at follow up versus 21.5% of placebo-treated patients (CMH test $p = 0.007$, GEE $p < 0.001$). The proportion of dnaJP1-treated patients who achieved an ACR20 response at Days 112, 140, 168, and follow up was significantly higher than that of placebo-treated patients (CMH $p = 0.03$; GEE $p = 0.0005$). A statistically significant difference was also seen for the AUC when more strict ACR50 criteria were applied (GEE $p = 0.02$). The primary endpoint (AUC 112-140-168) found more patients succeeding on dnaJP1 ($p = 0.09$ by CMH and $p = 0.04$ by adjusted GEE). GEE analysis was employed to correct for intercenter variability and this was possible as randomization occurred per center. Patients in this study were permitted to be on currently available standard background therapies, including hydroxychloroquine, corticosteroids, sulfasalazine, analgesics, and non-steroidal anti-inflammatory drugs, but not on disease modifying agents or biologics.

From an immunologic standpoint, dnaJP1 also demonstrated an 80% reduction in the in vitro production of TNF-alpha by T cells ($p < 0.007$), a hallmark cytokine of inflammation. Additionally, oral dnaJP1 treated patients demonstrated an increase in tolerogenic cytokines and immune response genes, including IL-10 and FoxP3 production. The study investigators concluded that tolerization to dnaJP1 leads to immune deviation and a trend toward clinical efficacy.

In combination with low dose etanercept (Enbrel®), an animal equivalent of dnaJP1 has also demonstrated a significant reduction of mean arthritis scores achieved on day 23 ($p = 0.0004$) as compared to placebo in preclinical animal models. Additionally, oral dnaJP1 and single low dose etanercept combination therapy led to a significant improvement of the histological score in the joints ($p = 0.014$ verus untreated). Lastly, combination therapy of etanercept and oral dnaJP1 led to an antigen-specific increase of tolerogenic cytokines, including IL-10 and IL-4 production and up regulation of CTLA-4 expression.

dnaJP1 Market Opportunity

Rheumatoid arthritis is an autoimmune disease that affects approximately 20 million people worldwide. It is a chronic inflammatory disease that leads to pain, stiffness, swelling and limitation in the motion and function of multiple joints. If left untreated, rheumatoid arthritis can produce serious destruction of joints that frequently leads to permanent disability. Though the joints are the principal body part affected by rheumatoid arthritis, inflammation can develop in other organs as well. The disease currently affects over two million Americans, almost 1% of the population, and is two to three times more prevalent in women than men. Onset can occur at any point in life but is most frequent in the fourth and fifth decades of life, with most patients developing the disease between the ages of 35 and 50. Over 20 million people suffer from rheumatoid arthritis worldwide and the global market is estimated at over $6.3 billion. Disease-modifying antirheumatic drugs, including biologics, accounted for nearly $5 billion of that figure.

ZincMonoCysteine

ZincMonoCysteine (zinc-monocysteine) is an investigational oral drug for the treatment of dry age-related macular degeneration. It is a complex of zinc and the amino acid cysteine that Adeona believes may have improved properties compared to currently marketed zinc–based products. ZincMonoCysteine was invented and developed by David A. Newsome, M.D., former Chief of the Retinal Disease Section of the National Eye Institute. Dr. Newsome was the first to pioneer and demonstrate the benefits of oral high dose zinc therapy in dry age-related macular degeneration. Oral high dose zinc containing products now represent the standard of care for dry age-related macular degeneration affecting over 10 million Americans and have annual sales of approximately $300 million.

ZincMonoCysteine has completed an 80-patient, randomized, double-blind, placebo-controlled clinical trial in dry age-related macular degeneration and demonstrated highly statistically significant improvements in central retinal function. These results were published in a peer-reviewed journal in 2008. Adeona believes that the patent-pending, modified-release formulations of ZincMonoCysteine and may offer the significant advantages of convenient once-a-day dosing and improved gastrointestinal tolerability compared to currently-marketed oral high dose zinc-containing products. During the third quarter of 2009, Adeona did further manufacturing and scale up of ZincMonoCysteine to support the further nonclinical testing and cGMP manufacturing required to support further drug development.

Copper and Zinc Metabolism Clinical Diagnostic Test

During the first quarter of 2009, Adeona analyzed patient samples from an institutional review board-approved, prospective, observational, blinded clinical study that was sponsored and conducted during 2007 and 2008. The study enrolled 90 subjects, 30 with Alzheimer's disease, 30 with Parkinson's disease and 30 age-matched normal subjects. The purpose of the study was to evaluate serum markers of copper status and compare these results across the three groups of patients. The results of the study indicate highly statistically significant differences in serum markers of copper status between Alzheimer’s disease and normal subjects. Adeona believes that the differences observed suggest that Alzheimer's patients have impaired metabolic functioning that decreases their protection from chronic copper toxicity, which may contribute to the progression of their disease. The results from this study also appear to indicate a subclinical zinc deficiency in Alzheimer’s disease patients. In July of 2009, Adeona announced the presentation of the findings from this study at the 2009 International Conference on Alzheimer’s disease. There is an estimated 5.8 million, 1.5 million and 15 million persons in the United States with Alzheimer’s disease, Parkinson’s disease and mild cognitive impairment, respectively, that may benefit from Adeona’s panel of clinical diagnostic tests.

In July of 2009 Adeona acquired HartLab, LLC, an Illinois limited liability company and clinical laboratory through which we have launched our panel of copper and zinc metabolism clinical diagnostic tests. Adeona also intends to develop other specialty diagnostic tests through HartLab and also to grow the core clinical laboratory business in the

greater Chicago area.

In November of 2009, Adeona announced the launch of the HartLab subsidiary's diagnostic test panel, the CopperProof TM Panel, for the evaluation of zinc and copper status in patients with Alzheimer's disease and mild cognitive impairment. The CopperProof TM Panel provides a comprehensive analysis of the metabolic serum copper and zinc status of Alzheimer's disease and mild cognitive impairment patients, the status of which has been shown to be impaired in this patient population. Defects in copper metabolism and high free copper levels are increasingly being recognized as significant factors in the progression of neurodegenerative diseases, including Alzheimer's disease and mild cognitive impairment. Adeona believes that this panel will allow physicians to determine the copper and zinc metabolic status of these patients as an aid in their continued treatment program.

Intellectual Property

Adeona's goal is to (a) obtain, maintain, and enforce patent protection for its products, formulations, processes, methods, and other proprietary technologies, (b) preserve our trade secrets, and (c) operate without infringing on the proprietary rights of other parties, worldwide. Adeona seeks, where appropriate, the broadest intellectual property protection for product candidates, proprietary information, and proprietary technology through a combination of contractual arrangements and patents.

Below is a description of our license and development agreements relating to our product candidates :

McLean Hospital Exclusive License Agreement

In 2005, as amended in 2007 and 2010, Pipex, Adeona's wholly owned subsidiary, entered into an exclusive license agreement with the McLean Hospital, a Harvard University hospital, relating to U.S. Patent No. 6,610,324 and its foreign equivalents, entitled "Flupirtine in the treatment of fibromyalgia and related conditions." Pursuant to this agreement, Pipex paid an upfront fee of $20,000 and back patent costs of approximately $41,830 and agreed to pay McLean royalties on net sales of flupirtine equal to 3.5% of net sales of flupirtine for indications covered by the issued patents, reduced to 1.75% if Pipex has a license to other intellectual property covering those indications; use Pipex's best efforts to commercialize flupirtine for the therapeutic uses embodied in the patent applications; reimburse future patent costs and pay the following milestone payments: $150,000 upon the initiation of a pivotal phase 3 clinical trial of flupirtine; $300,000 upon the filing of an New Drug Application for flupirtine; and $600,000 upon Food and Drug Administration approval of flupirtine. The due diligence requirements of the exclusive license agreement were amended in April 2010 and further amended by a Non-Disturbance Agreement that was signed with Pipex, McLean Hospital and Meda.

Effective May 6, 2010, Pipex and Adeona entered into a Sublicense Agreement (the "Agreement") with Meda AB of Sweden. Pursuant to the Agreement, Meda has been granted an exclusive sublicense to all of Pipex's patents covering the use of flupirtine for fibromyalgia. These patents have been issued in the U.S. and are pending in Canada and Japan (the "Territory"). The Agreement provides that Meda will assume all future development costs for the commercialization of flupirtine for fibromyalgia. As consideration for such sublicense, Pipex received an up-front payment of $2.5 million upon execution of the Agreement and are entitled to milestone payments of $5 million upon filing of a New Drug Application with the Food and Drug Administration for flupirtine for fibromyalgia and $10 million upon marketing approval. The Agreement also provides that Pipex is entitled to receive royalties of 7% of net sales of flupirtine approved for the treatment of fibromyalgia covered by issued patent claims in the Territory. Pursuant to the terms of Pipex's agreement with the company's university licensor, Pipex is obligated to share half of the royalties it receives with the university licensor and Pipex is obligated to pay them $375,000 upon receipt of an upfront payment.

Thomas Jefferson University License Agreement

In 2002, as amended in 2009, Adeona's majority owned subsidiary CD4 Biosciences Inc. entered into an exclusive worldwide license agreement with Thomas Jefferson University (TJU) relating to certain U.S. and foreign issued patents and patent applications relating to all uses of CD4 Inhibitor 802-2 and CD4 inhibitor technology. Pursuant to this agreement we paid an upfront license fee of $80,000, an additional $25,000 was paid at the 12 month anniversary of the agreement, and $25,000 was paid at the 18 month anniversary of the agreement. Adeona is obligated to pay annual maintenance fees, milestone payments of $200,000 upon the filing of a New Drug Application and $500,000 upon approval of an New Drug Application with the Food and Drug Administration, as well as royalties on net sales of anti-CD4 802-2 and other anti-CD4 molecules covered by the licensed patents. Adeona also received rights to valuable data generated under any Investigation New Drug application filing, which includes toxicology and

manufacturing information relating to anti-CD4 802-2. As partial consideration for this license, TJU was issued shares representing 5% of the common stock of CD4 Biosciences Inc. Adeona also agreed that TJU would receive anti-dilution protection on those CD4 shares through the first $2 million in financing to CD4. Adeona also agree to indemnify TJU against certain liabilities.

The Regents of University of California License Agreement

In 2005, Adeona was granted an exclusive worldwide license agreement with the Regents of the University of California relating to an issued US Patent No. 6,936,599 and pending patent applications covering the uses of the drug candidate Trimesta. Pursuant to this agreement, Adeona paid an upfront license fee of $20,000, reimbursed patent expenses of $41,000 and agreed to pay a license fee of $25,000 during 2006, as well as annual maintenance fees, milestone payments totaling $750,000 that are payable on filing an New Drug Application, and on approval of an New Drug Application with the Food and Drug Administration, as well as royalties on net sales of Trimesta covered by the licensed patents. Adeona may be permitted to partially pay milestone payments in the form of equity.

Zinc Monocysteine License Agreement

In July of 2007, Adeona entered into an exclusive worldwide license agreement with David A. Newsome, M.D., and David Tate, M.S., relating to zinc monocysteine for all uses. Pursuant to this agreement, Adeona paid an upfront license fee of $65,000 and reimbursed patent expenses of $25,000. Milestone payments totaling $1,400,000 may be due upon the achievement of certain milestones, as well as royalties of three percent (3%) on net sales for the licensed technology covered by the licensed patents. Adeona has the ability to make these milestone payments in the form of equity.

The Regents of University of California License Agreement

In July of 2008, Adeona entered into an exclusive worldwide license agreement with the Regents of the University of California relating to a series of issued US patents and pending patent applications covering novel uses of an orally active immunotherapeutic technology, dnaJP1 a candidate which has completed a 160-patient, double-blind, placebo-controlled phase II clinical trial for treatment of rheumatoid arthritis. Pursuant to this agreement, Adeona paid an upfront license fee of $25,000, reimbursed patent expenses as well as future patent and expenses annual maintenance fees of $50,000 per year, milestone payments ranging from $75,000 to $5,000,000 that are payable on various clinical and regulatory milestones, as well as royalties on net sales of the licensed technology covered by the licensed patents.

RISK FACTORS

You should carefully consider the specific risks set forth under the caption “Risk Factors” in the applicable prospectus supplement and under the caption “Risk Factors” in any of our filings with the Commission pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), incorporated by reference herein, including the Risk Factors in our Form 10-K for our fiscal year ended December 31, 2009, before making an investment decision. Each of the risks described in these sections and documents could materially and adversely affect our business, financial condition, results of operations and prospects and could result in partial of complete loss of your investment. For more information, see “Where You Can Find More Information.”

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and 21E of the Securities Exchange Act of 1934. You should not place undue reliance on these statements. These forward-looking statements include statements that reflect the current views of our senior management with respect to our financial performance and future events with respect to our business and our industry in general. Statements that include the words “expect,” “intend,” “plan,” “believe,” “project,” “forecast,” “estimate,” “may,” “should,” “anticipate statements of a future or forward-looking nature identify forward-looking statements. Forward-looking statements address matters that involve risks and uncertainties. Accordingly, there are or will be important factors that could cause our actual results to differ materially from those indicated in these statements. We believe that these factors include, but are not limited to, the following:

a failure of our product candidates to be demonstrably safe and effective;

a failure to obtain regulatory approval for our products or to comply with ongoing regulatory requirements;

a lack of acceptance of our product candidates in the marketplace;

a failure by us to become or remain profitable;

an inability by us to obtain the capital necessary to fund our research and development activities;

a loss of any of our key scientist or management personnel.

The foregoing factors should not be construed as exhaustive and should be read together with the other cautionary statements included in this prospectus and other reports we file with the Securities and Exchange Commission, including the information under “Item 1A. Risk Factors” of Part I of our Annual Report on Form 10-K for our fiscal year ended December 31, 2009. The forward-looking statements speak as of the date made and are not guarantees of

future performance. If one or more events related to these or other risks or uncertainties materialize, or if our underlying assumptions prove to be incorrect, actual results may differ materially from what we anticipate. We undertake no obligation to publicly update or revise any forward-looking statement, other than as required by law.

USE OF PROCEEDS

Unless otherwise provided in the applicable prospectus supplement, we intend to use the net proceeds from the sale of the securities under this prospectus for general corporate purposes, which may include general working capital, capital expenditures, research and development expenditures, regulatory affairs expenditures, clinical trial expenditures, acquisitions of new technologies and investments. Additional information on the use of net proceeds from the sale of securities offered by this prospectus may be set forth in the prospectus supplement relating to that offering. Pending the application of the net proceeds, we intend to invest the net proceeds in short-term, investment-grade, interest-bearing securities.

DESCRIPTION OF CAPITAL STOCK

The following description of certain terms of our capital stock does not purport to be complete and is qualified in its entirety by reference to our articles of incorporation, our bylaws and provision of the Nevada Revised Statute. For more information on how you can obtain our Articles of Incorporation and bylaws, see "Where You Can Find more Information." We urge you to read out Articles of Incorporation and bylaws in their entirety.

Authorized Capital Stock

We are authorized to issue 100 million shares of common stock, par value $.001 per share, and 10 million shares of preferred stock, par value $.001 per share. At May 3, 2010, we had 21,698,945 shares of common stock outstanding and no shares of preferred stock outstanding. Although our board of directors has no present intention to do so, it could issue common stock or a series of preferred stock that could, depending on the terms of such securities, impede the completion of a merger, tender offer or take-over attempt. Our board of directors will make any determination to issue such shares based upon its judgment and the best interests of us and our shareholders.

Common Stock

We may offer shares of our common stock. Our common stock currently trades on the AMEX under the symbol "AEN." Holders of shares of common stock have the right to cast one vote for each share of common stock in their name on the books of our company, whether represented in person or by proxy, on all matters submitted to a vote of holders of common stock, including election of directors. There is no right to cumulative voting in election of directors. Except where a greater requirement is provided by statute, by our articles of incorporation, or by our bylaws, the presence, in person or by proxy duly authorized, of the one or more holders of a majority of the outstanding shares of our common stock constitutes a quorum for the transaction of business. The vote by the holders of a majority of outstanding shares is required to effect certain fundamental corporate changes such as liquidation, merger, or amendment of our articles of incorporation.

Except as otherwise provided by the Nevada Revised Statute or our Articles of Incorporation, holders of our common stock share ratably in all dividends and distributions, as may be declared form time to time by our board of directors from funds legally available therefore, whether upon liquidation or distribution or otherwise. There are no restrictions in our articles of incorporation or bylaws that prevent us from declaring dividends. The Nevada Revised Statute does, however, prohibit us from declaring dividends where, after giving effect to the distribution of the dividend (1) we would not be able to pay our debts as they become due in the usual course of business or (2) our total assets would be less than the sum of our total liabilities plus the amount that would be needed to satisfy the rights of stockholders who have preferential rights superior to those receiving the distribution.

We have not declared any dividends, and we do not plan to declare any dividends in the foreseeable future.

Holders of shares of our common stock are not entitled to preemptive or subscription or conversion rights, and no redemption or sinking fund provisions are applicable to our common stock. All outstanding shares of common stock are, and the shares of common stock sold in the offering will when issued, fully paid and non-assessable.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Corporate Stock Transfer, Inc. of Denver, Colorado.

Listing

Our common stock is listed on the American Stock Exchange under the symbol “AEN.”

DESCRIPTION OF WARRANTS

General

We may issue warrants to purchase common stock (which we refer to as common stock warrants). Any of these warrants may be issued independently or together with any other securities offered by this prospectus and may be attached to or separate from the other securities. If warrants are issued, they will be issued under warrant agreements.

We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from a current report on Form 8-K that we file with the SEC, the form of warrant agreement that describes the terms of the warrants we are offering, and any supplemental agreements, before the issuance of the warrants. The following summaries of material terms and provisions of the warrants are subject to, and qualified in their entirety by reference to, all the provisions of the warrant agreement and any supplemental agreements applicable to those warrants. We urge you to read the applicable prospectus supplements related to the particular warrants that we sell under this prospectus, as well as the complete warrant agreement and any supplemental agreements that contain the terms of the warrants.

Terms of the Warrants

The applicable prospectus supplement will describe the following terms of common stock warrants offered under this prospectus:

(1) the title;

(2) the securities issuable upon exercise;

(3) the issue price or prices;

(4) the number of warrants issued with each share of common stock;

(5) any provisions for adjustment of (a) the number or amount of shares of common stock receivable upon exercise of the warrants or (b) the exercise price;

(6) if applicable, the date on and after which the warrants and the related common stock will be separately transferable;

(7) if applicable, a discussion of the material United States federal income tax considerations applicable to the exercise of the warrants;

(8) any other terms, including terms, procedures and limitations relating to exchange and exercise;

(9) the commencement and expiration dates of the right to exercise; and

(10) the maximum or minimum number that may be exercised at any time.

Exercise of Warrants

Each warrant will entitle the holder to purchase for cash the amount of shares of common stock at the applicable exercise price set forth in, or determined as described in, the applicable prospectus supplement. Warrants may be

exercised at any time up to the close of business on the expiration date set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants will become void.

Warrants may be exercised by delivering to us or any other person indicated in the applicable prospectus supplement (a) the warrant certificate properly completed and duly executed and (b) payment of the amount due upon exercise. As soon as practicable following exercise, we will forward the shares of common stock purchasable upon exercise. If less than all of the warrants represented by a warrant certificate are exercised, a new warrant certificate will be issued for the remaining warrants.

PLAN OF DISTRIBUTION

We may sell the securities being offered by us in this prospectus:

directly to purchasers;
through agents;
through dealers;
through underwriters; or
through a combination of any of these methods of sale.

In addition, the manner in which we may sell some or all of the securities covered by this prospectus includes, without limitation, through:

a block trade in which a broker-dealer will attempt to sell as agent, but may position or resell a portion of the block, as principal in order to facilitate the transaction
purchases by a broker-dealer, as principal, and resale by the broker-dealer for its account; or
ordinary brokerage transactions and transaction in which a broker solicits purchasers.

Furthermore, we may enter into derivative or hedging transactions with third parties, or sell securities not covered by this prospectus to third parties in privately negotiated transactions. In connection with such a transaction, the third parties may sell securities covered by and pursuant to this prospectus and an applicable prospectus supplement or other offering materials, as the case may be. If so, the third party may use securities borrowed from us or others to settle such sales and may use securities received from us to close out any related short positions. We may also loan or pledge securities covered by this prospectus and an applicable prospectus supplement to third parties, who may sell the loaned securities or, in an event of default in the case of a pledge, sell the pledged securities pursuant to this prospectus and the applicable prospectus supplement or other offering materials, as the case may be.

We and our agents and underwriters may sell the securities being offered by us in this prospectus from time to time in one or more transactions:

at a fixed price or prices, which may be changed;
at market prices prevailing at the time of sale;
at prices related to the prevailing market prices; or
at negotiated prices.

We may solicit directly offers to purchase securities. We may also designate agents from time to time to solicit offers to purchase securities. Any agent, who may be deemed to be an “underwriter” as that term is defined in the Securities Act of 1933, as amended (the “Securities Act”) may then resell the securities to the public at varying prices to be determined by that agent at the time of resale.

In the sale of the securities, underwriters, dealers or agents may receive compensation from us or from purchasers of the securities, for whom they may act as agents, in the form of discounts, concessions or commissions. Underwriters may sell the securities to or through dealers, and such dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters and/or commissions from the purchasers for whom they may act as agents. Underwriters, dealers and agents that participate in the distribution of the securities may be deemed to be underwriters under the Securities Act and any discounts or commissions they receive from us and any profit on the resale of securities they realize may be deemed to be underwriting discounts and commissions under the Securities Act. The applicable prospectus supplement will, where applicable:

identify any underwriter or agent;

describe any compensation in the form of discounts, concessions, commissions or otherwise received from us by each underwriter, dealer or agent and in the aggregate to all underwriters, dealers and agents;

identify the purchase price and proceeds from that sale;

identify the amounts underwritten;

identify the nature of the underwriter's obligation to take the securities; and

identify any quotation systems or securities exchanges on which the securities may be quoted or listed.

Underwriters, dealers, agents and other persons may be entitled, under agreements that may be entered into with us, to indemnification by us against certain civil liabilities, including liabilities under the Securities Act, or to contribution with respect to payments that they may be required to make in respect of these liabilities. Underwriters and agents may engage in transactions with, or perform services for, us in the ordinary course of business.

If so indicated in the applicable prospectus supplement, we will authorize underwriters, dealers, or other persons to solicit offers by certain institutions to purchase the securities offered by us under this prospectus pursuant to contracts providing for payment and delivery on a future date or dates. The obligations of any purchaser under any these contracts will be subject only to those conditions described in the applicable prospectus supplement, and the prospectus supplement will set forth the price to be paid for securities pursuant to these contracts and the commission's payable for solicitation of these contracts.

Any underwriter may engage in over-allotment, stabilizing and syndicate short covering transactions and penalty bids only in compliance with Regulation M of the Securities Exchange Act of 1934. If we offer securities in an "at the market" offering, stabilizing transactions will not be permitted. Over-allotment involves sales in excess of the offering size, which creates a short position. Stabilizing transactions involve bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum. Syndicate short covering transactions involve purchases of securities in the open market after the distribution has been completed in order to cover syndicate short positions. Penalty bids permit the underwriters to reclaim selling concessions from dealers when the securities originally sold by the dealers are purchased in covering transactions to cover syndicate short positions. These transactions may cause the price of the securities sold in an offering to be higher than it would otherwise be. We do not make any representation or prediction as to the direction or magnitude of any effect that the transactions described above might have on the price of the securities. These transactions, if commenced, may be discontinued by the underwriters at any time.

Each series of securities offered under this prospectus will be a new issue with no established trading market, other than the common stock, which is listed on the American Stock Exchange. Any shares of common stock sold pursuant to a prospectus supplement will be listed on the American Stock Exchange, subject to official notice of issuance. Any underwriters to whom we sell securities for public offering and sale may make a market in the securities, but these underwriters will not be obligated to do so and may discontinue any market making at any time without notice. We may elect to list any of the securities we may offer from time to time for trading on an exchange or on the American Stock Exchange, but we are not obligated to do so.

The anticipated date of delivery of the securities offered hereby will be set forth in the applicable prospectus supplement relating to each offering.

Underwriters, dealers and agents may engage in transactions with us or perform services for us in the ordinary course of business.

To comply with applicable state securities laws, the securities offered by this prospectus will be sold, if necessary, in such jurisdictions only through registered or licensed brokers or dealers. In addition, securities may not be sold in some states unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with.

In compliance with the guidelines of the Financial Industry Regulatory Authority ("FINRA"), the aggregate maximum discount, commission, or agency fees or other items of underwriting compensation to be received by an FINRA member or independent broker-dealer will not exceed 8% of any offering pursuant to this prospectus and any prospectus supplement or other offering materials, as the case may be.

If 5% or more of the net proceeds of any offering of securities made under this prospectus will be received by a FINRA member participating in the offering or affiliates or associated persons of such FINRA member, the offering will be conducted in accordance with NASD Conduct Rule 2720.

LEGAL MATTERS

The legality of the Shares offered hereby has been passed upon for us by Gracin & Marlow, LLP, New York, New York.

EXPERTS

The financial statements incorporated in this prospectus from our Annual Report on Form 10-K for the year ended December 31, 2009 have been audited by Berman & Company, P.A., an independent registered public accounting firm, as stated in their report, which is incorporated by reference, which report expresses an unqualified opinion. The financial statements have been incorporated upon the authority of said firm as experts in accounting and auditing in giving said reports.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and special reports, proxy statements and other information with the Securities and Exchange Commission. You may read and copy any document we file at the Commission's public reference room located at 100 F Street N.E., Washington, D.C. 20549. Please call the Commission at 1-800-SEC-0330 for further information on the operation of the public reference room. Our public filings are also available to the public at the Commission's web site at http://www.sec.gov.

This prospectus is part of a registration statement on Form S-3 that we have filed with the Commission under the Securities Act. This prospectus does not contain all of the information in the registration statement. We have omitted certain parts of the registration statement, as permitted by the rules and regulations of the Commission. You may inspect and copy the registration statement, including exhibits, at the Commission's public reference room or Internet site.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The Commission allows us to "incorporate by reference" the information we file with it which means that we can disclose important information to you by referring you to those documents instead of having to repeat the information in this prospectus. The information incorporated by reference is considered to be part of this prospectus, and later information that we file with the Commission will automatically update and supersede this information. We incorporate by reference the documents listed below and any future filings made with the Commission under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act between the date of this prospectus and the termination of the offering:

Our annual report on Form 10-K for the fiscal year ended December 31, 2009.

The description of our common stock set forth in our registration statement on Form 8-A, filed with the Commission on January 29, 1993 (File No. 000-21156).

Our Current Report on Form 8-K filed with the Securities and Exchange Commission on January 13, 2010.

Our Current Report on Form 8-K filed with the Securities and Exchange Commission on February 9, 2010.

Our Current Report on Form 8-K filed with the Securities and Exchange Commission on March 16, 2010.

Our Current Report on Form 8-K/A filed with the Securities and Exchange Commission on March 31, 2010.

Our Current Report on Form 8-K filed with the Securities and Exchange Commission on April 5, 2010.

Our Current Report on Form 8-K filed with the Securities and Exchange Commission on May 11, 2010.

Our Quarterly Report on Form 10-Q filed with the Securities and Exchange Commission on May 17, 2010.

Our Current Report on Form 8-K filed with the Securities and Exchange Commission on June 3, 2010.

You may obtain, free of charge, a copy of any of these documents (other than exhibits to these documents unless the exhibits are specifically incorporated by reference into these documents or referred to in this prospectus) by writing or calling us at the following address and telephone number:

ADEONA PHARMACEUTICALS, INC.
3985 Varsity Drive
Ann Arbor, MI 48108
Attention: Corporate Secretary
(734) 332-7800

ADEONA PHARMACEUTICALS, INC.

UP TO $15 Million

PROSPECTUS DATED JUNE 14, 2010

Common Stock
Warrants

You should rely only on the information contained or incorporated by reference in this prospectus. We have not authorized anyone to provide you with different information. You should not assume that the information contained or incorporated by reference in this prospectus is accurate as of any date other than the date of this prospectus. We are not making an offer of these securities in any state where the offer is not permitted.