

ADEONA PHARMACEUTICALS, INC.

FORM S-3

(Securities Registration Statement (simplified form))

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Address	3930 VARSITY DRIVE ANN ARBOR, MI 48108
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UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form S-3

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

ADEONA PHARMACEUTICALS, INC.

(Exact Name of Registrant as Specified in Its Charter)

Nevada
*(State or Other Jurisdiction of
Incorporation or Organization)*

13-3808303
*(I.R.S. Employer
Identification Number)*

3930 Varsity Drive
Ann Arbor, Michigan 48108
(734) 332-7800
(Address, Including Zip Code, and Telephone Number, Including Area Code, of Registrant's Principal Executive Offices)

James S. Kuo, M.D., M.B.A.
Chief Executive Officer
Adeona Pharmaceuticals, Inc.
3930 Varsity Drive
Ann Arbor, MI 48108
(734) 332-7800
(Name, Address, Including Zip Code, and Telephone Number, Including Area Code of Agent for Service)

With copies to:

Hank Gracin
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Chrysler Building
405 Lexington Avenue, 26th Floor
New York, New York 10174
(212) 907-6457

Approximate date of commencement of proposed sale to the public: From time to time after the effective date of this registration statement.

If the only securities being registered on this form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.

If this form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

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

Act. (Check one):

Large accelerated filer

Accelerated filer

Non-accelerated filer
(Do not check if a smaller reporting
company)

Smaller reporting
company

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Amount to be Registered	Proposed Maximum Offering Price per Security	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee (3)
Common stock, par value \$.001 per share	(1)	\$ (2)	\$ (2)	\$
Warrants	(1)	(2)	(2)	
Total			\$15,000,000	\$1,069.50

- (1) Securities registered hereunder may be sold separately, together or as units with other securities registered hereunder. There are being registered hereunder such indeterminate number of shares of common stock and such indeterminate number of warrants to purchase common stock, as shall have an aggregate initial offering price not to exceed in the aggregate \$15,000,000, inclusive of warrants.. The proposed maximum initial offering price per security will be determined, from time to time, by the registrant in connection with the issuance by the registrant of the securities registered hereunder. The securities registered hereunder also include such indeterminate number of shares of common stock as may be issued upon conversion upon exercise of warrants or pursuant to the anti-dilution provisions of any such securities. In addition, pursuant to Rule 416 under the Securities Act, the securities being registered hereunder include such indeterminate number of shares of common stock as may be issuable with respect to the shares being registered hereunder as a result of stock splits, stock dividends or similar transactions.
- (2) The proposed maximum offering price will be determined from time to time by the registrant in connection with the issuance by the registrant of the securities registered hereunder and is not specified as to each class of security pursuant to General Instruction II.D of Form S-3 under the Securities Act
- (3) Calculated pursuant to Rule 457(o) under the Securities Act.

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the registration statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

The information contained in this prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

PRELIMINARY PROSPECTUS SUBJECT TO COMPLETION, DATED MAY 11, 2010

ADEONA PHARMACEUTICALS, INC.

\$15,000,000

Common Stock
Warrants

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 3930 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 10.

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

The date of this prospectus is May __, 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 Nevada 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
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™ 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 tetrathiomolybdate 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 relapsing-remitting 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 relapsing-remitting 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™. 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 antinociceptive effects has been observed. One common link between neuroprotection, nociception, 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 Pipex granted 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:

	Galzin		Galzin		Galzin		Zinthionein ZC			
	Placebo	%	100 mg	%	50 mg	%	All	%	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 11 clinical 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 tolerance 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 by 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 ($p = 0.014$ versus 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™ Panel, for the evaluation of zinc and copper status in patients with Alzheimer's disease and mild cognitive impairment. The CopperProof™ 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 a 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 a 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 a New Drug Application, and on approval of a 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 set forth 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 or 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” and similar 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 from 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

Gracin & Marlow, LLP, New York, New York will issue an opinion about certain legal matters with respect to the securities.

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 May 11, 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.
3930 Varsity Drive
Ann Arbor, MI 48108
Attention: Corporate Secretary
(734) 332-7800

ADEONA PHARMACEUTICALS, INC.

UP TO \$15 Million

PRELIMINARY PROSPECTUS DATED May 6, 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.

PART II

INFORMATION NOT REQUIRED IN THE PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution.

The following table sets forth the estimated fees and expenses in connection with the shelf registration of the common stock registered under this registration statement, other than any underwriting discounts and commissions. The actual amounts of such fees and expenses will be determined from time to time. All amounts shown are estimates except for the Securities and Exchange Commission registration fee.

SEC registration fee	\$	1,069.50
Legal fees and expenses		5,000
Accounting fees and expenses		5,000
Transfer agent and registrar fees and expenses		2,000
Printing and engraving expenses		1,800
Miscellaneous		130.50
		<hr/>
Total	\$	<u>15,000</u>

Item 15. Indemnification of Directors and Officers.

Section 78.138 of the Nevada Revised Statute provides that a director or officer is not individually liable to the corporation or its stockholders or creditors for any damages as a result of any act or failure to act in his capacity as a director or officer unless it is proven that (1) his act or failure to act constituted a breach of his fiduciary duties as a director or officer and (2) his breach of those duties involved intentional misconduct, fraud or a knowing violation of law.

This provision is intended to afford directors and officers protection against and to limit their potential liability for monetary damages resulting from suits alleging a breach of the duty of care by a director or officer. As a consequence of this provision, stockholders of our company will be unable to recover monetary damages against directors or officers for action taken by them that may constitute negligence or gross negligence in performance of their duties unless such conduct falls within one of the foregoing exceptions. The provision, however, does not alter the applicable standards governing a director's or officer's fiduciary duty and does not eliminate or limit the right of our company or any stockholder to obtain an injunction or any other type of non-monetary relief in the event of a breach of fiduciary duty.

The Registrant's Articles of Incorporation and By-laws provide for indemnification of directors, officers, employees or agents of the Registrant to the fullest extent permitted by Nevada law (as amended from time to time). Section 78.7502 of the Nevada Revised Statute provides that such indemnification may only be provided if the person acted in good faith and in a manner he reasonably believed to be in, or not opposed to, the best interest of the Registrant and, with respect to any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful.

Item 16. Exhibits

Exhibit	Description
1.1	Form of Underwriting Agreement with respect to common stock*
3.1	Form of Warrant Agreement*
5.1	Opinion of Gracin & Marlow, LLP**
23.1	Consent of Berman & Company, P.A.**
23.3	Consent of Gracin & Marlow, LLP (included in Exhibit 5.1)
24.1	Powers of Attorney for our directors and certain executive officers

* To be filed, if necessary, by an amendment to this registration statement or incorporated by reference pursuant to a Current Report on Form 8-K in connection with the offering of securities registered hereunder.

** Filed herewith

Item 17. Undertakings

The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in this registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high and of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

(iii) To include any material information with respect to the plan of distribution not previously disclosed in this registration statement or any material change to such information in this registration statement;

Provided, however, that subparagraphs (i), (ii) and (iii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in this registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of this registration statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered herein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:

(i) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(ii) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of this registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii) or (x) for the purpose of providing the information required by section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in this registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of this registration statement relating to the securities in this registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. *Provided, however,* that no statement made in a registration statement or prospectus that is part of this registration statement or made in a document incorporated or deemed incorporated by reference into this registration statement or prospectus that is a part of this registration statement will, as to a purchaser with a time of contract sale prior to such effective date, supersede or modify any statement that was made in this registration statement or prospectus that was a part of this registration statement or made in any such document immediately prior to such effective date.

(iii) If the registrant is subject to Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. *Provided, however,* that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date.

(5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

- (i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;
- (ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
- (iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and
- (iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(6) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to section 13(a) or section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in this registration statement shall be deemed to be a new registration statement relating to the securities offered herein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(7) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Ann Arbor, State of Michigan, May 11, 2010.

ADEONA PHARMACEUTICALS,
INC.

By: /s/ James S. Kuo
Chairman of the Board of Directors
Chief Executive Officer and President
(Principal Executive Officer and Principal
Financial and Accounting Officer)

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints James Kuo his/her true and lawful attorney-in-fact and agent with full power of substitution and re-substitution, for him/her and in his/her name, place and stead, in any and all capacities to sign any or all amendments (including, without limitation, post-effective amendments) to this Registration Statement, any related Registration Statement filed pursuant to Rule 462(b) under the Securities Act of 1933 and any or all pre- or post-effective amendments thereto, and to file the same, with all exhibits thereto, and all other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully for all intents and purposes as he or she might or could do in person, hereby ratifying and confirming that said attorney-in-fact and agent, or any substitute or substitutes for him, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed by the following persons in the capacities and on the dates stated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ James S. Kuo</u> James S. Kuo	Chairman of the Board of Directors, Chief Executive Officer and President (Principal Executive Officer and Principal Financial and Accounting Officer)	May 11, 2010
<u>/s/ Steve H. Kanzer</u> Steve H. Kanzer	Director	May 11, 2010
<u>/s/ Jeffrey J. Kraws</u> Jeffrey J. Kraws	Director	May 11, 2010
<u>/s/ Jeffrey Wolf</u> /as Jeffrey Wolf	Director	May 11, 2010
<u>/s/ Jeff Riley</u> /as Jeff Riley	Director	May 11, 2010

EXHIBIT INDEX

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23.3	Consent of Gracin & Marlow, LLP (included in Exhibit 5.1)
24.1	Powers of Attorney for our directors and certain executive officers

* To be filed, if necessary, by an amendment to this registration statement or incorporated by reference pursuant to a Current Report on Form 8-K in connection with the offering of securities registered hereunder.

** Filed herewith

GRACIN & MARLOW, LLP
Chrysler Building
405 Lexington Avenue
26th Floor
New York, New York 10174

May 11, 2010

The Board of Directors
Adeona Pharmaceuticals, Inc.
3930 Varsity Drive
Ann Arbor, MI 48108

Re: Registration Statement on Form S-3

Gentlemen:

We have acted as counsel to Adeona Pharmaceuticals, Inc., a Nevada corporation (the "Company"), and are rendering this opinion in connection with the filing of a Registration Statement on Form S-3 (the "Registration Statement") by the Company with the Securities and Exchange Commission (the "Commission") under the Securities Act of 1933, as amended (the "Securities Act"), relating to:

- (1) shares of the Company's common stock, par value \$.001 per share (the "Common Stock")
- (2) warrants representing rights to purchase Common Stock (the "Warrants"), and
- (3) units consisting of any combination of the foregoing securities (the "Units") of the Company.

The Common Stock, Warrants and Units are hereinafter collectively referred to as the "Offered Securities." The Offered Securities may be issued and sold by the Company from time to time, pursuant to Rule 415 under the Securities Act, as set forth in the Registration Statement, any amendment thereto, and the prospectus contained therein (the "Prospectus") and any supplements thereto (each a "Prospectus Supplement"), for up to an aggregate offering price of \$15,000,000.

This opinion is being furnished in accordance with the requirements of Item 601(b)(5) of Regulation S-K under the Securities Act, and no opinion is expressed herein as to any matter pertaining to the contents of the Registration Statement, the Prospectus or any Prospectus Supplement other than as to the validity of the Offered Securities. This opinion is based upon currently existing statutes, rules, regulations and judicial decisions, and we disclaim any obligation to advise you of any change in any of these sources of law or subsequent legal or factual developments which might affect any matters or opinions set forth herein.

We have examined originals or copies, certified or otherwise identified to our satisfaction, of (i) the Registration Statement and all exhibits thereto, (ii) the Certificate of Incorporation of the Company (the "Certificate of Incorporation"), and amendments thereto (iii) the By-Laws of the Company (the "By-Laws"). We have also examined such corporate records and other agreements, documents and instruments, and such certificates or comparable documents of public officials and officers and representatives of the Company, and have made such inquiries of such officers and representatives and have considered such matters of law as we have deemed appropriate as the basis for the opinions hereinafter set forth.

In delivering this opinion, we have assumed the genuineness of all signatures, the legal capacity of natural persons, the authenticity of all documents submitted to us as originals, the conformity to originals of all documents submitted to us as copies, the authenticity of originals of all such latter documents, and the accuracy and completeness of all records, information and statements submitted to us by officers and representatives of the Company.

Based upon and subject to the limitations, qualifications and assumptions set forth herein, we are of the opinion that:

1. With respect to any offering of Common Stock by the Company pursuant to the Registration Statement (the "Offered Common Stock"), when (a) the Registration Statement and any amendment thereto (including a post-effective amendment) has become effective under the Securities Act, (b) the board of directors or any duly designated committee thereof has adopted resolutions approving the issuance and sale of the Offered Common Stock at a specified price (not less than the par value of the Common Stock) or pursuant to a specified pricing mechanism, (c) a Prospectus Supplement has been filed with the Commission describing the Offered Common Stock, (d) if the Offered Common Stock is to be sold in a firm commitment underwritten offering, an underwriting agreement with respect to the Offered Common Stock has been duly authorized, executed and delivered by the Company and the other parties thereto, (e) there are sufficient shares of Common Stock authorized under the Company's organizational documents and not otherwise reserved for issuance, (f) certificates representing the shares of Offered Common Stock have been duly executed by appropriate officers of the Company or appropriate book entries have been made in the stock records of the Company, and (g) the shares of Offered Common Stock have been duly and properly sold, paid for and delivered as contemplated in the Registration Statement, any Prospectus Supplement relating thereto and, if applicable, in accordance with the applicable underwriting or other purchase agreement, or upon exercise of Warrants to purchase Common Stock, the shares of Offered Common Stock will be duly authorized, validly issued, fully paid and non-assessable.



2. With respect to any offering of Warrants by the Company pursuant to the Registration Statement (the “Offered Warrants”), when (a) the Registration Statement and any amendment thereto (including a post-effective amendment) has become effective under the Securities Act, (b) the board of directors or any duly designated committee thereof has adopted resolutions approving the form, terms, issuance and sale of the Offered Warrants at a specified price or pursuant to a specified pricing mechanism in conformity with the Warrant Agreement (as defined below), (c) a Prospectus Supplement has been filed with the Commission describing the Offered Warrants, (d) if the Offered Warrants are to be sold in a firm commitment underwritten offering, an underwriting agreement with respect to the Offered Warrants has been duly authorized, executed and delivered by the Company and the other parties thereto, (e) certificates representing the Offered Warrants have been duly executed by appropriate officers of the Company and, if applicable, warrant agent; and (f) the Offered Warrants have been duly and properly sold, paid for and delivered as contemplated in the Registration Statement, any prospectus supplement relating thereto and, if applicable, in accordance with the applicable underwriting or other purchase agreement and otherwise in accordance with the provisions of any applicable warrant agreement (the “Warrant Agreement”) between the Company and, if applicable, the purchaser or warrant agent named therein, the Offered Warrants will constitute valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.

3. With respect to any offering of Units by the Company pursuant to the Registration Statement (the “Offered Units”), when (a) the Registration Statement and any amendment thereto (including a post-effective amendment) has become effective under the Securities Act, (b) when the board of directors has taken all necessary corporate action to authorize and approve the form, issuance, execution and terms of the Offered Units, the related unit agreements between the Company and the unit agent or purchaser named therein (“Unit Agreements”), if any, and any Offered Securities which are components of such Offered Units, the terms of the offering thereof and related matters, (c) a Prospectus Supplement has been filed with the Commission describing the Offered Units, (d) if the Offered Units are to be sold in a firm commitment underwritten offering, an underwriting agreement with respect to the Offered Units has been duly authorized, executed and delivered by the Company and the other parties thereto, and (e) the (i) Offered Units, (ii) the Unit Agreements, if any, and (iii) such Offered Securities that are components of such Offered Units have been duly and properly sold, paid for and delivered as contemplated in the Registration Statement, any prospectus supplement relating thereto and, if applicable, in accordance with the applicable underwriting or other purchase agreement and otherwise in accordance with the provisions of any applicable Unit Agreement and Warrant Agreement, in the case of Warrants, such Units will be validly issued and will entitle the holder thereof to the rights specified in the Unit Agreements, if any.

For the purposes of this opinion letter, we have assumed that, at the time of the issuance, sale and delivery of the Offered Securities at issue: (a) the authorization thereof by the Company will not have been modified or rescinded, and there will not have occurred any change in law affecting the validity, legally binding character or enforceability thereof; and (b) the Certificate of Incorporation of the Company, as currently in effect, will not have been modified or amended and will be in full force and effect.

We are members of the bar of the State of New York and Florida and our opinion herein is limited to the laws of such states, the federal laws of the United States of America, and the General Corporation Law of the State of Nevada, to the extent applicable. We also express no opinion herein with respect to compliance by the Company with securities or “blue sky” laws of any state or other jurisdiction of the United States or of any foreign jurisdiction. In addition, we express no opinion and make no statement herein with respect to the antifraud laws of any jurisdiction.

Our opinion that any document is legal, valid and binding is qualified as to:

- (a) limitations imposed by bankruptcy, insolvency, reorganization, arrangement, fraudulent conveyance, moratorium or other laws relating to or affecting the rights of creditors generally;
 - (b) rights to indemnification and contribution, which may be limited by applicable law or equitable principles; and
-

(c) general principles of equity, including without limitation concepts of materiality, reasonableness, good faith and fair dealing, and the possible unavailability of specific performance or injunctive relief and limitation of rights of acceleration, regardless of whether such enforceability is considered in a proceeding in equity or at law.

We hereby consent to the filing of this opinion as an exhibit to the above-referenced Registration Statement and to the use of our name wherever it appears in the Registration Statement, the Prospectus, any Prospectus Supplement, and in any amendment or supplement thereto. In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission thereunder.

Very truly yours,

/s/ Gracin & Marlow, LLP

Gracin & Marlow, LLP

Consent of Independent Registered Public Accounting Firm

We hereby consent to the incorporation by reference in the Registration Statement on Form S-3 of Adeona Pharmaceuticals, Inc. and Subsidiaries (a development stage company) of our report dated March 30, 2010 on the consolidated financial statements of Adeona Pharmaceuticals, Inc. and Subsidiaries for the years ended December 31, 2009 and 2008 and for the period from January 8, 2001 (inception) to December 31, 2009, included in Form 10-K filed on March 31, 2010, and to the reference to our firm under the heading "Experts" in the prospectus.

Berman & Company, P.A.
Certified Public Accountants

Boca Raton, Florida
May 7, 2010