As filed with the Securities and Exchange Commission on August 27, 2009

REGISTRATION NO. 333-

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM S-3

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

PHARMATHENE, INC.

(Exact name of registrant as specified in its charter)

Delaware	**20-2726770**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

One Park Place, Suite 450
Annapolis, MD 21401
(410) 269-2600
(Address, including zip code, and telephone number, including area code, of Registrant's principal executive offices)

David P. Wright
Chief Executive Officer
PharmAthene, Inc.
One Park Place, Suite 450
Annapolis, MD 21401
(410) 269-2600
(Name, address, including zip code, and telephone number, including area code, of agent for service)

With a copy to:

Jeffrey A. Baumel, Esq.
Sonnenschein Nath & Rosenthal LLP
1221 Avenue of the Americas
New York, New York 10020
(212) 768-6700

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. o

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. x

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. o

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. o

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. o

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. o

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.

Large accelerated filer o Accelerated filer o

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

CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered	Amount to be registered(1)	Proposed maximum offering price per share	Proposed maximum aggregate offering price	Amount of registration fee
Common Stock, par value $0.0001 per share, to be issued upon conversion of 10% convertible notes	9,112,256(2)	$ 2.541667(3)	$ 23,160,322.14	$ 1,292.35
Common stock, par value $0.0001 per share, to be issued upon exercise of fixed-price warrants	2,572,775	$ 2.50(3)	$ 6,431,937.50	$ 358.90

(1) Pursuant to Rule 416 under the Securities Act of 1933, as amended (the "Securities Act"), the Registrant is also registering hereunder an indeterminate number of additional shares of common stock that shall be issuable to prevent dilution resulting from stock splits, stock dividends or similar transactions.

(2) Represents the sum of (i) up to 7,591,780 shares of common stock that are issuable in respect of the aggregate principal amount of the 10% convertible notes and (ii) up to 1,520,476 shares of common stock that are issuable in respect of interest that accrues on the 10% convertible notes, assuming conversion of all of the notes on the date of maturity.

(3) Calculated pursuant to Rule 457(g) under the Securities Act based on the fixed conversion or exercise price of the security.

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 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 in this prospectus is not complete and may be changed. The selling stockholders 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.

Subject to Completion, Dated August 27, 2009

PROSPECTUS

PharmAthene

9,112,256 Shares of Common Stock Underlying 10% Convertible Notes
2,572,775 Shares of Common Stock Underlying Fixed-Price Warrants

This prospectus relates to the resale from time to time by the selling stockholders of PharmAthene, Inc. (described in the section entitled "Selling Stockholders" on page 15 of this prospectus) of up to 11,685,031 shares of our common stock, par value $0.0001 per share, including (i) up to 9,112,256 shares of common stock issuable upon conversion of the 10% Convertible Notes issued to investors pursuant to the Note and Warrant Purchase Agreement, dated as of July 24, 2009, as amended (which we refer to as the "Note and Warrant Purchase Agreement"), between PharmAthene, Inc. and the investors named therein, and (ii) up to 2,572,775 shares of our common stock issuable upon exercise of warrants with a fixed exercise price of $2.50 per share issued pursuant to the Note and Warrant Purchase Agreement (which we refer to as the "warrants").

The selling stockholders may offer and sell, from time to time, in the open market or in privately negotiated transactions and at market prices, fixed prices or negotiated prices, all or any portion of such shares in amounts and on terms to be determined at the time of sale. For additional information on the possible methods of sale that may be used by the selling stockholders, you should refer to the section entitled "Plan of Distribution" on page 18 of this prospectus. We will not receive any of the proceeds from the resale of shares of our common stock by the selling stockholders.

Our common stock is listed on NYSE Amex under the symbol "PIP." On August 25, 2009, the last reported sale price per share of common stock on that exchange was $3.06.

Investing in our common stock involves certain risks. You should read the entire prospectus and any accompanying prospectus supplement carefully before you make your investment decision. See "Risk Factors" beginning on page 3.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is , 2009.

ABOUT THIS PROSPECTUS

You should rely only on the information contained or incorporated by reference in this prospectus and any applicable prospectus supplements. Neither the Company nor the selling stockholders have authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. The Company is not making any offer to sell these securities and the selling stockholders are not making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus is accurate only as of the date on the cover page and that information contained in any document incorporated by reference in this prospectus is only accurate as of the date of the document incorporated by reference. Our business, financial condition, results of operations and prospects may have subsequently changed.

On August 3, 2007, Healthcare Acquisition Corp. ("HAQ") consummated a merger (the "Merger") with a Delaware corporation which at the time was known as "PharmAthene, Inc." ("Former PharmAthene"), whereby Former PharmAthene became a wholly-owned subsidiary of HAQ, HAQ changed its name to "PharmAthene, Inc." and Former PharmAthene changed its name to "PharmAthene US Corporation." Effective February 27, 2009 PharmAthene US Corporation was merged with and into PharmAthene, Inc., with PharmAthene, Inc. being the surviving corporation. Unless specifically noted otherwise, as used throughout this prospectus, "the Company", "PharmAthene", "we", "us" or "our" refers to the business of the combined company after the Merger and to the business of Former PharmAthene prior to the Merger. The phrase "this prospectus" refers to this prospectus and any applicable prospectus supplement, unless the context otherwise requires. Whenever we refer to "you" or "yours", we mean the persons to whom offers are made under this prospectus.

SUMMARY

We are a biodefense company engaged in the development and commercialization of medical countermeasures against biological and chemical weapons. We currently have five product candidates in various stages of development:

- SparVax™ - a second generation recombinant protective antigen ("rPA") anthrax vaccine,
- Valortim®, a fully human monoclonal antibody (an identical population of highly specific antibodies produced from a single clone) for the prevention and treatment of anthrax infection,
- Protexia®, which mimics a natural bioscavenger for the treatment or prevention of nerve agent poisoning by organophosphate compounds, including nerve gases and pesticides,
- RypVax™ - a recombinant dual antigen vaccine for pneumonic and bubonic plague ("rYP"), and
- a third generation rPA anthrax vaccine.

Our executive offices are located at One Park Place, Suite 450, Annapolis, Maryland 21401 and our telephone number is (410) 269-2600.

RISK FACTORS

Investing in our securities involves risks. In addition to the other information in this prospectus you should carefully consider the risks described below relating to investment in our common stock. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently consider immaterial may also impair our business operations. If any of the following risks actually occur, our business, financial condition and/or results of operations could be materially adversely affected, the trading price of our common stock could decline and you could lose all of your investment.

Risk Related to Request for Proposal RFP-BARDA-08-15

If we do not receive the award by the U.S. Department of Health and Human Services (the "DHHS") for an rPA anthrax vaccine, we likely will need to curtail our operations significantly and we may be placed at a competitive disadvantage in the biodefense industry.

On February 29, 2008, the DHHS issued a formal Request for Proposal (RFP-BARDA-08-15) for an "Anthrax Recombinant Protective Antigen (rPA) Vaccine for the Strategic National Stockpile," which includes a requisition for 25 million doses of an rPA anthrax vaccine. We submitted a response to this solicitation on July 31, 2008. While the original solicitation indicated that an award would be made by September 26, 2008, which was later extended to December 31, 2008, DHHS subsequently delayed the award date further because, among other things, of a protest filed by a bidder that had been eliminated from further consideration under the solicitation. The U.S. General Accounting Office (the "GAO") subsequently denied that protest. On April 15, 2009, DHHS issued an amendment to the RFP requiring that each bidder submit by April 30, 2009 a comprehensive plan to the FDA outlining the bidder's regulatory strategy for the rPA anthrax vaccine to be developed under a contract should one be awarded under the solicitation. Pursuant to an amendment dated April 22, 2009, DHHS further extended the submission deadline to June 15, 2009. On July 9, 2009, the Company announced that the FDA completed its review of the Company's proposed development plan for SparVax ™ , and the Company has shared the FDA's feedback with BARDA as required by these two amendments. Timing for an award under this solicitation remains uncertain. There can be no assurance that DHHS will not again extend the timeline for issuing an award, add other requirements, or that the Company will be awarded a contract under that solicitation.

We are currently aware of at least one other bidder for the award with substantially greater financial and other resources, manufacturing capabilities and commercialization capabilities than we have. Because the U.S. government is currently the only customer for our product candidates, if we fail to receive the award for the rPA anthrax vaccine, we could be forced to abandon or severely curtail our efforts with respect to our lead product candidate, SparVax™, which, in turn, could place us at a competitive disadvantage. We have been engaged in discussions with DHHS with respect to our ability to satisfy the requirements of the RFP. DHHS has requested additional information that, if not determined by them to be satisfactory, could result in our elimination from consideration for procurement. No assurances can be given that DHHS will make an award to us or that if made, it will not include substantial conditions, that we can satisfy all of these conditions or that we can begin to receive any proceeds from any such award within any specific period of time. In any event, we still have not completed development of SparVax™ and our ability to recognize any meaningful proceeds from the sale of SparVax™ will still depend upon our completing the development and testing of such product.

Risks Related to Our Financial Condition

We have a history of losses and negative cash flow, anticipate future losses and negative cash flow, and cannot provide assurances that we will achieve profitability.

We have incurred significant losses since we commenced operations. For the three and six months ended June 30, 2009, we incurred operating losses of approximately $6.8 million and $12.4 million respectively and had an accumulated deficit of approximately $136.7 million at June 30, 2009. Our losses to date have resulted principally from research and development costs related to the development of our product candidates, general and administrative costs related to operations, and costs related to the Avecia Acquisition.

Our likelihood for achieving profitability will depend on numerous factors, including success in:

- developing our existing products and developing and testing new product candidates;
- carrying out our intellectual property strategy;
- establishing our competitive position;
- pursuing third-party collaborations;

- acquiring or in-licensing products;
- receiving regulatory approvals;
- manufacturing and marketing products; and
- continuing to receive government funding and identifying new government funding opportunities.

Many of these factors will depend on circumstances beyond our control. We cannot guarantee that we will achieve sufficient revenues for profitability. Even if we do achieve profitability, we cannot guarantee that we can sustain or increase profitability on a quarterly or annual basis in the future. If revenues grow more slowly than we anticipate, or if operating expenses exceed our expectations or cannot be adjusted accordingly, then our business, results of operations, financial condition and cash flows will be materially and adversely affected. Because our strategy might include acquisitions of other businesses, acquisition expenses and any cash used to make these acquisitions will reduce our available cash. While we believe that funds received from the recent convertible debt financing we completed in July 2009 along with existing cash resources will be sufficient to enable us to fund our existing research and development programs, pay our debt service costs and support our currently anticipated general and administrative activities through the end of 2010, there can be no assurance that unexpected financial obligations or other activities that increase our use of cash will not result in our depleting our cash resources quicker than presently anticipated. Furthermore, if we receive the award from DHHS for advanced development and procurement of SparVax™, we would be obligated to make $10 million in milestone payments to Avecia within 90 days of the receipt of such award.

The current turmoil affecting the banking system and financial markets and the possibility that financial institutions may consolidate or cease operations has resulted in a tightening in the credit markets, a low level of liquidity in many financial markets and extreme volatility in fixed income, credit, currency and equity markets. In addition, the note and warrant purchase agreement entered into in connection with the issuance of the 10% Convertible Notes and warrants limits us and our subsidiaries from incurring senior indebtedness (other than customary trade payables) in excess of $10 million without the prior written approval of no less than a majority of the aggregate principal amount of the 10% Convertible Notes then outstanding. As a result of both the market turmoil and the limits on issuance of senior indebtedness, there can be no assurances that we will be successful in obtaining sufficient financing on commercially reasonable terms or at all. Our requirements for additional capital may be substantial and will be dependent on many factors, including the success of our research and development efforts, our ability to commercialize and market products, our ability to successfully pursue our licensing and collaboration strategy, the receipt of continued government funding, competing technological and marketing developments, costs associated with the protection of our intellectual property and any future change in our business strategy.

To the extent that we raise additional capital through the sale of securities, the issuance of those securities would result in dilution that could be substantial to our stockholders. In addition, if we incur additional debt financing, a substantial portion of our operating cash flow may be dedicated to the payment of principal and interest on such indebtedness, thus limiting funds available for our business activities.

If adequate funds are not available, we may be required to curtail significantly our development and commercialization activities. This would have a material adverse effect on our business, financial condition and/or results of operations.

Risks Related to Product Development and Commercialization

We have not commercialized any products or recognized any revenues from sales. All of our product candidates are still under development, and there can be no assurance of successful commercialization of any of our products.

We have not commercialized any products or recognized any revenues from product sales. In general, our research and development programs are at early stages. There can be no assurances that one or more of our future product candidates would not fail to meet safety standards in human testing, even if those product candidates were found to be effective in animal studies. To develop and commercialize biodefense treatment and prophylactic product candidates, we must provide the U.S. Food and Drug Administration (the “FDA”) and foreign regulatory authorities with human clinical and non-clinical animal data that demonstrate adequate safety and effectiveness. To generate these data, we will have to subject our product candidates to significant additional research and development efforts, including extensive non-clinical studies and clinical testing. We cannot be sure that our approach to drug discovery will be effective or will result in the development of any drug. Even if our product candidates are successful when tested in animals, such success would not be a guarantee of the safety or effectiveness of such product candidates in humans.

Research and development efforts in the biodefense industry are time-consuming and subject to delays. Even if we initially receive positive early-stage pre-clinical or clinical results, such results may not be indicative of results that could be anticipated in the later stages of drug development. Delays in obtaining

results in our non-clinical studies and clinical testing can occur for a variety of reasons, such as slower than anticipated enrollment by volunteers in the trials, adverse events related to the products, failure to comply with Good Clinical Practices, unforeseen safety issues, unsatisfactory results in trials, perceived defects in the design of clinical trials, changes in regulatory policy as well as for reasons detailed in " *Risk Factors—Necessary Reliance on the Animal Rule in Conducting Trials is Time-Consuming and Expensive* .."

Any delay or adverse clinical event arising during any of our clinical trials could force us to conduct additional clinical trials in order to obtain approval from the FDA and other regulatory bodies. Our development costs will increase substantially if we experience material delays in any clinical trials or if we need to conduct more or larger trials than planned.

If delays are significant, or if any of our products do not prove to be safe, pure, and potent (including efficacy) or do not receive required regulatory approvals, we may have to abandon the product altogether and will be unable to recognize revenues from the sale of that product. In addition, our collaborative partners may not be able to conduct clinical testing or obtain necessary approvals from the FDA or other regulatory authorities for any product candidates jointly developed by us and our partners. If we fail to obtain required governmental approvals, we and our collaborative partners will experience delays in, or be precluded from, marketing products developed through them or, as applicable, their research.

Necessary Reliance on the Animal Rule in Conducting Trials is Time-Consuming and Expensive.

To obtain FDA approval for our biological warfare defense products under current FDA regulations, we are required to utilize animal model studies for efficacy and provide animal and human safety data under the "Animal Rule." For many of the biological and chemical threats, animal models are not yet available, and as such we are developing, or will have to develop, appropriate animal models, which is a time-consuming and expensive research effort. Further, we may not be able to sufficiently demonstrate the animal correlation to the satisfaction of the FDA, as these corollaries are difficult to establish and are often unclear. The FDA may decide that our data are insufficient for approval and require additional preclinical, clinical or other studies, refuse to approve our products, or place restrictions on our ability to commercialize those products. Further, other countries do not, at this time, have established criteria for review and approval of these types of products outside their normal review process; i.e., there is no "Animal Rule" equivalent, and consequently there can be no assurance that we will be able to make a submission for marketing approval in foreign countries based on such animal data.

Additionally, few facilities in the U.S. and internationally have the capability to test animals with anthrax, plague, nerve agents, or other lethal biotoxins or chemical agents or otherwise assist us in qualifying the requisite animal models. We have to compete with other biodefense companies for access to this limited pool of highly specialized resources. We therefore may not be able to secure contracts to conduct the testing in a predictable timeframe or at all.

Even if we succeed in commercializing our product candidates, they may not become profitable and manufacturing problems or side effects discovered at later stages can further increase costs of commercialization.

We cannot assure you that any drugs resulting from our research and development efforts will become commercially available. Even if we succeed in developing and commercializing our product candidates, we may never generate sufficient or sustainable revenues to enable us to be profitable. Even if effective, a product that reaches market may be subject to additional clinical trials, changes to or re-approvals of our manufacturing facilities or a change in labeling if we or others identify side effects or manufacturing problems after a product is on the market. This could harm sales of the affected products and could increase the cost and expenses of commercializing and marketing them. It could also lead to the suspension or revocation of regulatory approval for the products.

We and our contract manufacturers ("CMO"s) will also be required to comply with the applicable FDA current Good Manufacturing Practice ("cGMP") regulations. These regulations include requirements relating to quality control and quality assurance as well as the corresponding maintenance of records and documentation. Manufacturing facilities are subject to inspection by the FDA. These facilities must be approved to supply licensed products to the commercial marketplace. We and our contract manufacturers may not be able to comply with the applicable cGMP requirements and other FDA regulatory requirements. Should we or our contract manufacturers fail to comply, we could be subject to fines or other sanctions or could be precluded from marketing our products.

In particular, as part of the transfer of our existing contract with NIAID for the development of SparVax™ to BARDA on April 1, 2009, the terms of that contract were modified to provide for the transfer of the manufacturing process for the bulk drug substance for SparVax™ from Avecia Biologics in the U.K. to a U.S.-based contract manufacturing organization. We believe that if we are awarded a contract under RFP-BARDA-08-15 for the advanced development and procurement of 25 million doses of SparVax™, the U.S. government will require that such new CMO manufacture the bulk drug substance for SparVax™. This contract manufacturer has not manufactured that bulk drug substance before, and there can be no assurance we will be successful in our technology transfer efforts or that this new contract manufacturer will ever be able to manufacture sufficient amounts of cGMP quality bulk drug substance necessary for us to meet our obligations under any such advanced development and procurement contract.

We may fail to fully realize the potential of Valortim® and of our co-development arrangement with Medarex, our partner in the development of Valortim®, which would have an adverse effect upon our business. We have completed one Phase I clinical trial for Valortim® with our development partner, Medarex, without any reported drug-related significant adverse events. However, before we may begin selling any doses of Valortim®, we will need to conduct more comprehensive safety trials in a significantly larger group of human subjects. We will be required to expend a significant amount to finalize manufacturing capability through a contract manufacturer to provide material to conduct the pivotal safety and efficacy trials. If our contract manufacturer is unable to produce sufficient quantities at a reasonable cost, or has any other obstacles to production, such as volatile manufacturing, then we will be unable to commence these required clinical trials and studies. Even after we expend sufficient funds to complete the development of Valortim® and if and when we enter into an agreement to supply Valortim® to the U.S. government, we will be required to share any and all profits from the sale of products with our partner in accordance with a pre-determined formula.

If we cannot maintain successful licensing arrangements and collaborations, enter into new licensing arrangements and collaborations, or effectively accomplish strategic acquisitions, our ability to develop and commercialize a diverse product portfolio could be limited and our ability to compete may be harmed.

A key component of our business strategy is the in-licensing of compounds and products developed by other pharmaceutical and biotechnology companies or academic research laboratories.

For example, we have an agreement with Medarex to develop Valortim®, a fully human monoclonal antibody product designed to protect against and treat inhalation anthrax. Under the agreement with Medarex, we will be entitled to a variable percentage of profits derived from sales of Valortim®, if any, depending, in part, on the amount of our investment. In addition, we have entered into licensing and research and development agreements with a number of other parties and collaborators. There can be no assurances that the research and development conducted pursuant to these agreements will result in revenue generating product candidates. If our suppliers, vendors, licensors, or other collaboration partners experience financial difficulties as a result of the current credit crisis and weakening of the global economy, or if they are acquired as part of the current wave of consolidations in the pharmaceutical industry (such as, for example, with the pending acquisition of Medarex by Bristol Myers Squibb), their priorities or our working relationship with them might change. As a result, they might shift resources away from the research, development and/or manufacturing efforts intended to benefit our products, which could lead to significant delays in our development programs and potential future sales. Finally, our current licensing, research and development, and supply agreements may expire and may not be renewable or could be terminated if we do not meet our obligations.

If we are not able to identify new licensing opportunities or enter into other licensing arrangements on acceptable terms, we may be unable to develop a diverse portfolio of products. In order for our future collaboration efforts to be successful, we must first identify partners whose capabilities complement and integrate well with ours. We face, and will continue to face, significant competition in seeking appropriate collaborators. Collaboration arrangements are complex and time consuming to negotiate, document and implement. We may not be successful in our efforts to establish and implement collaborations or other similar arrangements. The terms of any collaboration or other arrangements that we establish may not be favorable to us. Furthermore, technologies to which we gain access may prove ineffective or unsafe or our partners may prove difficult to work with or less skilled than we originally expected. In addition, any past collaborative successes are no indication of potential future success.

We may also pursue strategic acquisitions to further our development and commercialization efforts. To achieve the anticipated benefits of an acquisition, we must integrate the acquired company's business, technology and employees in an efficient and effective manner. The successful combination of companies in a rapidly changing biodefense industry may be more difficult to accomplish than in other industries. The combination of two companies requires, among other things, integration of the companies' respective technologies and research and development efforts. We cannot assure you that any integration will be accomplished smoothly or successfully. The difficulties of integration are increased by the need to coordinate geographically separated organizations and address possible differences in corporate cultures and management philosophies. The integration of certain operations will require the dedication of management resources that may temporarily distract attention from the day-to-day operations of the combined companies. The business of the combined companies may also be disrupted by employee retention uncertainty and lack of focus during integration. The inability of management to integrate successfully the operations of the two companies, in particular, to integrate and retain key scientific personnel, or the inability to integrate successfully two technology platforms, could have a material adverse effect on our business, results of operations and financial condition.

We may become subject to product liability claims, which could reduce demand for our product candidates or result in damages that exceed our insurance coverage.

We face an inherent risk of exposure to product liability suits in connection with our product candidates being tested in human clinical trials or sold commercially. We may become subject to a product liability suit if any product we develop causes

injury, or if treated individuals subsequently become infected or suffer adverse effects from our products. Regardless of merit or eventual outcome, product liability claims may result in decreased demand for a product, injury to our reputation, withdrawal of clinical trial volunteers and loss of revenues.

In addition, if a product liability claim is brought against us, the cost of defending the claim could be significant and any adverse determination may result in liabilities in excess of our insurance coverage. Although our anthrax countermeasures are covered under the general immunity provisions of the U.S. Public Readiness and Emergency Preparedness Act (the "Public Readiness Act"), there can be no assurance that the U.S. Secretary of Health and Human Services will make other declarations in the future that cover any of our other product candidates or that the U.S. Congress will not act in the future to reduce coverage under the Public Readiness Act or to repeal it altogether. For further discussion of that act, see "Risk Factors - *Legislation limiting or restricting liability for medical products used to fight bioterrorism is new, and we cannot be certain that any such protection will apply to our products or if applied what the scope of any such coverage will be*" below. Additionally, we are considering applying for indemnification under the U.S. Support Anti-terrorism by Fostering Effective Technologies (SAFETY) Act of 2002 which preempts and modifies tort laws so as to limit the claims and damages potentially faced by companies who provide certain "qualified" anti-terrorism products. However, we cannot be certain that we will be able to obtain or maintain coverage under the SAFETY Act or adequate insurance coverage on acceptable terms, if at all.

Risks Related to Our Dependence on U.S. Government Contracts

Most of our immediately foreseeable future revenues are contingent upon grants and contracts from the U.S. government and we may not achieve sufficient revenues from these agreements to attain profitability.

For the foreseeable future, we believe our main customer will be national governments, primarily the U.S. government. Substantially all of our revenues to date have been derived from grants and U.S. government contracts. There can be no assurances that existing government contracts will be renewed or that we can enter into new contracts or receive new grants. The process of obtaining government contracts is lengthy and uncertain and we will have to compete with other companies for each contract. For example, while RFP-BARDA-08-15 for an rPA vaccine for the SNS initially indicated that the government would make an award by September 26, 2008 (later extended to December 31, 2008), as of the date this Registration Statement is filed, the government has still not issued an award under that solicitation. There can be no assurances that we will be awarded any contracts to supply the U.S. or other governments with our products as such awards may be made, in whole or in part, to our competitors. If the U.S. government makes significant future contract awards for the supply to the U.S. emergency stockpile of a competing product, our business will be harmed and it is unlikely that we will ultimately be able to supply that particular treatment or product to foreign governments or other third parties. Further, changes in government budgets and agendas, or advances by our competitors, may result in a decreased and de-prioritized emphasis on procuring the biodefense products we are developing. For example, the U.S. government has selected a plague vaccine product candidate from a competitor for advanced development funding, and we do not anticipate that the U.S. government will provide additional funding in the future for or procure RypVax™. Furthermore, given the limited future prospects for RypVax™ at this time, we are in discussions with the U.S. government regarding potential early termination of our current contract. Under the terms of our 2006 contract with the U.S.

Department of Defense regarding Protexia®, the Department of Defense may elect not to continue development assistance of this nerve agent countermeasure after initial funding of $41 million has been received (which decision we anticipate may occur by the end of the fourth quarter of 2009 or early 2010), or, if the Department of Defense does so elect to continue funding and we meet all development milestones, it may nevertheless choose not to procure any doses of Protexia®.

Due to the current economic downturn, the accompanying fall in tax revenues and the U.S. government's efforts to stabilize the economy, the U.S. government may be forced or choose to reduce or delay spending in the biodefense field, which could decrease the likelihood of future government contract awards or that the government would procure products from us.

U.S. government agencies have special contracting requirements that give them the ability to unilaterally control our contracts.

U.S. government contracts typically contain unfavorable termination provisions and are subject to audit and modification by the government at its sole discretion, which will subject us to additional risks. These risks include the ability of the U.S. government unilaterally to:

- suspend or prevent us for a set period of time from receiving new contracts or extending existing contracts based on violations or suspected violations of laws or regulations;
- terminate our contracts, including if funds become unavailable to the applicable governmental agency;
- reduce the scope and value of our contracts;

- audit and object to our contract-related costs and fees, including allocated indirect costs;
- control and potentially prohibit the export of our products; and
- change certain terms and conditions in our contracts.

The U.S. government will be able to terminate any of its contracts with us either for its convenience or if we default by failing to perform in accordance with the contract schedule and terms. Termination-for-convenience provisions generally enable us to recover only our costs incurred or committed, settlement expenses, and profit on the work completed prior to termination. Termination-for-default provisions do not permit these recoveries and would make us liable for excess costs incurred by the U.S. government in procuring undelivered items from another source.

Due to the current economic downturn, the accompanying fall in tax revenues, and the U.S. government's efforts to stabilize the economy, the U.S. government may be forced or choose to reduce or delay spending in the biodefense field, which could decrease the likelihood of future government contract awards, the likelihood that the government will exercise its right to extend any of its existing contracts with us and/or the likelihood that the government would procure products from us.

The U.S. government's determination to award any contracts may be challenged by an interested party, such as another bidder, at the GAO or in federal court. If such a challenge is successful, a contract may be terminated.

The laws and regulations governing the procurement of goods and services by the U.S. government provide procedures by which other bidders and other interested parties may challenge the award of a government contract. If we are awarded a government contract, such challenges or protests could be filed even if there are not any valid legal grounds on which to base the protest. If any such protests are filed, the government agency may decide to suspend our performance under the contract while such protests are being considered by the GAO or the applicable federal court, thus potentially delaying delivery of goods and services and payment. In addition, we could be forced to expend considerable funds to defend any potential award. If a protest is successful, the government may be ordered to terminate our contract and reselect bids. The government could even be directed to award a potential contract to one of the other bidders. An example is the protest filed by a third-party bidder with the GAO challenging the decision of the DHHS to eliminate that bidder from further consideration under the solicitation for an rPA vaccine for the Strategic National Stockpile (RFP-BARDA-08-15), a result of which was a delay to the contract award date under this solicitation.

Our business is subject to audit by the U.S. government and a negative audit could adversely affect our business.

U.S. government agencies such as the Defense Contract Audit Agency, or the DCAA, routinely audit and investigate government contractors. These agencies review a contractor's performance under its contracts, cost structure and compliance with applicable laws, regulations and standards.

The DCAA also reviews the adequacy of, and a contractor's compliance with, its internal control systems and policies, including the contractor's purchasing, property, estimating, compensation and management information systems. Any costs found to be improperly allocated to a specific contract will not be reimbursed, while such costs already reimbursed must be refunded. If an audit uncovers improper or illegal activities, we may be subject to civil and criminal penalties and administrative sanctions, including:

- termination of contracts;
- forfeiture of profits;
- suspension of payments;
- fines; and
- suspension or prohibition from conducting business with the U.S. government.

In addition, we could suffer serious reputational harm if allegations of impropriety were made against us.

Laws and regulations affecting government contracts make it more costly and difficult for us to successfully conduct our business.

We must comply with numerous laws and regulations relating to the formation, administration and performance of government contracts, which can make it more difficult for us to retain our rights under these contracts. These laws and regulations affect how we conduct business with government agencies.

Among the most significant government contracting regulations that affect our business are:

- the Federal Acquisition Regulations, or FAR, and agency-specific regulations supplemental to the Federal Acquisition Regulations, which comprehensively regulate the procurement, formation, administration and performance of government contracts;
- the business ethics and public integrity obligations, which govern conflicts of interest and the hiring of former government employees, restrict the granting of gratuities and funding of lobbying activities and incorporate other requirements such as the Anti-Kickback Act and Foreign Corrupt Practices Act;
- export and import control laws and regulations; and
- laws, regulations and executive orders restricting the use and dissemination of information classified for national security purposes and the exportation of certain products and technical data.

Foreign governments typically also have laws and regulations governing contracts with their respective agencies. These foreign laws and regulations affect how we and our customers conduct business and, in some instances, impose added costs on our business. Any changes in applicable laws and regulations could restrict our ability to maintain our existing contracts and obtain new contracts, which could limit our ability to conduct our business and materially adversely affect our revenues and results of operations.

Risks Related to Dependence on or Competition From Third Parties

Because we depend on clinical research centers and other contractors for clinical and non-clinical testing, including testing under the Animal Rule, and for certain research and development activities, the results of our clinical trial, non-clinical animal efficacy studies, and research and development activities are largely beyond our control.

The nature of clinical trials and our business strategy of outsourcing substantially all of our research and development and manufacturing work require that we rely on clinical research centers and other contractors to assist us with research and development, clinical and non-clinical testing (including animal efficacy studies under the Animal Rule), patient enrollment and other activities. As a result, our success depends largely on the success of these third parties in performing their responsibilities. Although we prequalify our contractors and believe that they are fully capable of performing their contractual obligations, we cannot directly control the adequacy and timeliness of the resources and expertise that they apply to these activities. Furthermore, we have to compete with other biodefense companies for access to this limited pool of highly specialized resources. If our contractors do not perform their obligations in an adequate and timely manner or we are unable to enter into contracts with them because of prior commitments to our competitors, the pace of clinical or non-clinical development, regulatory approval and commercialization of our product candidates could be significantly delayed and our prospects could be adversely affected.

We depend on third parties to manufacture, package and distribute compounds for our product candidates and key components for our product candidates. The failure of these third parties to perform successfully could harm our business.

We do not have any of our own manufacturing facilities. We have therefore utilized, and intend to continue utilizing, third parties to manufacture, package and distribute our product candidates and key components of our product candidates. Any material disruption in manufacturing could cause a delay in our development programs and potential future sales. Furthermore, certain compounds, media, or other raw materials used to manufacture our drug candidates are available from any one or a limited number of sources. Any delays or difficulties in obtaining key components for our product candidates or in manufacturing, packaging or distributing our product candidates could delay clinical trials and further development of these potential products. Additionally, the third parties we rely on for manufacturing and packaging are subject to regulatory review, and any regulatory compliance problems with these third parties could significantly delay or disrupt our commercialization activities.

We were notified by the contract manufacturer who supplies the pegylation reagent for our Protexia® product candidate that it intends to cease its contract manufacturing operations to focus exclusively on developing its own proprietary product candidates. We are now in the process of searching for an alternative supplier. As part of this process, we will need to negotiate and execute a license to certain intellectual property from our current supplier related to the pegylation process and to engage in a technology transfer process to a new supplier. If we are not successful in these endeavors, our Protexia® development program will be adversely affected.

Finally, third-party manufacturers, suppliers and distributors, like most companies, have been adversely affected by the current credit crisis and weakening of the global economy and as such may be more susceptible to being acquired as part of

the current wave of consolidations in the pharmaceutical industry. It has, for example, become increasingly challenging for companies to secure debt capital to fund their operations as financial institutions have significantly curtailed their lending activities. If our third-party suppliers continue to experience financial difficulties as a result of weakening demand for their products or for other reasons and are unable to obtain the capital necessary to continue their present level of operations or are acquired by others, they may have to reduce their activities and/or their priorities or our working relationship with them might change. A material deterioration in their ability or willingness to meet their obligations to us could cause a delay in our development programs and potential future sales and jeopardize our ability to meet our obligations under our contracts with the government or other third parties.

We face, and likely will continue to face, competition from companies with greater financial, personnel and research and development resources. Our commercial opportunities will be reduced or eliminated if our competitors are more successful in the development and marketing of their products.

The biopharmaceutical industry is characterized by rapid and significant technological change. Our success will depend on our ability to develop and apply our technologies in the design and development of our product candidates and to establish and maintain a market for our product candidates. There are many organizations, both public and private, including major pharmaceutical and chemical companies, specialized biotechnology firms, universities and other research institutions engaged in developing pharmaceutical and biotechnology products. Many of these organizations have substantially greater financial, technical, intellectual property, research and development, and human resources than we have. Competitors may develop products or other technologies that are more effective than any that we are developing or may obtain FDA approval for products more rapidly. As noted above in "- *Most of our immediately foreseeable future revenues are contingent upon grants and contracts from the U.S. government and we may not achieve sufficient revenues from these agreements to attain profitability,*" the U.S. government has selected a plague vaccine product candidate from a competitor for advanced development funding. We are in discussions with the U.S. government regarding potential early termination of our contract for RypVax™, which is currently scheduled to end during the first half of 2011.

If we commence commercial sales of products, we still must compete in the manufacturing and marketing of such products, areas in which we have limited experience. Many of these organizations also have manufacturing facilities and established marketing capabilities that would enable such companies to market competing products through existing channels of distribution. Our commercial opportunities will be reduced or eliminated if our competitors develop and market products that:

- are more effective;
- have fewer or less severe adverse side effects;
- are more adaptable to various modes of dosing;
- obtain orphan drug exclusivity that blocks the approval of our application for seven years;
- are easier to administer; or
- are less expensive than the products or product candidates that we are, or in the future will be, developing.

While the regulatory climate for generic versions of biological products approved under a Biologics License Application (or a BLA) in the United States remains uncertain, and currently there is no formalized mechanism by which the FDA can approve a generic version of an approved biological product, Federal legislation has been introduced to establish a legal pathway for the approval of generic versions of approved biological products. If enacted, the legislation will impact the revenue projections for our products.

Even if we are successful in developing effective products, and obtain FDA and other regulatory approvals necessary for commercializing them, our products may not compete effectively with other successful products. Our competitors may succeed in developing and marketing products either that are more effective than those that we may develop, alone or with our collaborators, making our products obsolete, or that are marketed before any products that we develop are marketed.

Risks Related to Political and Social Factors

Political or social factors may delay or impair our ability to market our products and our business may be materially adversely affected.

Products developed to treat diseases caused by, or to combat the threat of, bioterrorism will be subject to changing political and social environments. The political and social responses to bioterrorism have been unpredictable. Political or social pressures may delay or cause resistance to bringing our products to market or limit pricing of our products, which would harm our business.

Risks Related to Intellectual Property

Our commercial success will be affected significantly by our ability (i) to obtain and maintain protection for our proprietary technology and that of our licensors and collaborators and (ii) not to infringe on patents and proprietary rights of third parties.

The patent position of biotechnology firms generally is highly uncertain and involves complex legal and factual questions, and, therefore, validity and enforceability cannot be predicted with certainty. To date, no consistent policy has emerged regarding the breadth of claims allowed in biotechnology patents. We currently hold two U.S. patents, have six pending U.S. patent applications, and have a limited number of international patents pending. In addition, we have rights under numerous other patents and patent applications pursuant to exclusive and non-exclusive license arrangements with licensors and collaborators. However, there can be no assurance that patent applications owned or licensed by us will result in patents being issued or that the patents, whether existing or issued in the future, will afford protection against competitors with similar technology. Any conflicts resulting from third-party patent applications and patents could significantly reduce the coverage of the patents owned, optioned by or licensed to us or our collaborators and limit our ability or that of our collaborators to obtain meaningful patent protection.

Further, our commercial success will depend significantly on our ability to operate without infringing the patents and proprietary rights of third parties. We are aware of one U.S. patent covering recombinant production of an antibody and a license may be required under such patent with respect to Valortim®, which is a monoclonal antibody and uses recombinant reproduction of antibodies. Although the patent owner has granted licenses under such patent, we cannot provide any assurances that we will be able to obtain such a license or that the terms thereof will be reasonable. If we do not obtain such a license and if a legal action based on such patent was to be brought against us or our distributors, licensees or collaborators, we cannot provide any assurances that we or our distributors, licensees or collaborators would prevail or that we have sufficient funds or resources to defend such claims.

We are also aware of pending applications directed to pegylated butyrylcholinesterase. Protexia® incorporates butyrylcholinesterase. If patents are issued to third parties that cover Protexia® or other products, we may be required to obtain a license under such patents or obtain alternative technology. We cannot

provide any assurances that such licenses will be available or that the terms thereof will be reasonable or that we will be able to develop alternative technologies. If we do not obtain such a license and if a legal action based on such patent was to be brought against us or our distributors, licensees or collaborators, we cannot provide any assurances that we or our distributors, licensees or collaborators would prevail or that we have sufficient funds or resources to defend such claims.

The costs associated with establishing the validity of patents, of defending against patent infringement claims of others and of asserting infringement claims against others is expensive and time consuming, even if the ultimate outcome is favorable. An outcome of any patent prosecution or litigation that is unfavorable to us or one of our licensees or collaborators may have a material adverse effect on us. The expense of a protracted infringement suit, even if ultimately favorable, would also have a material adverse effect on us.

We furthermore rely upon trade secrets protection for our confidential and proprietary information. We have taken measures to protect our proprietary information; however, these measures may not provide adequate protection to us. We have sought to protect our proprietary information by entering into confidentiality agreements with employees, collaborators and consultants. Nevertheless, employees, collaborators or consultants may still disclose our proprietary information, and we may not be able to meaningfully protect our trade secrets. In addition, others may independently develop substantially equivalent proprietary information or techniques or otherwise gain access to our trade secrets.

Risks Related to Regulatory Approvals and Legislation

Our use of hazardous materials and chemicals requires us to comply with regulatory requirements which may result in significant costs and expose us to potential liabilities.

Our research and development involves the controlled use of hazardous materials and chemicals. We are subject to federal, state, local and foreign laws governing the use, manufacture, storage, handling and disposal of such materials. We will not be able to eliminate the risk of accidental contamination or injury from these materials. In the event of such an accident, we could be forced to pay significant damages or fines, and these damages could exceed our resources and any applicable insurance coverage. In addition, we may be required to incur significant costs to comply with regulatory requirements in the future.

Legislation limiting or restricting liability for medical products used to fight bioterrorism is new, and we cannot be certain that any such protection will apply to our products or if applied what the scope of any such coverage will be.

The U.S. Public Readiness Act was signed into law in December 2005 and creates general immunity for manufacturers of countermeasures, including security countermeasures (as defined in Section 319F-2(c)(1)(B) of that act), when the U.S. Secretary of Health and Human Services issues a declaration for their manufacture, administration or use. The declaration is meant to provide general immunity from all claims under state or federal law for loss arising out of the administration or use of a covered countermeasure. Manufacturers are excluded from this protection in cases of willful misconduct. Although our anthrax countermeasures have been covered under the general immunity provisions of the Public Readiness Act since October 1, 2008, there can be no assurance that the Secretary of Health and Human Services will make other declarations in the future that would cover any of our other product candidates or that the U.S. Congress will not act in the future to reduce coverage under the Public Readiness Act or to repeal it altogether.

Upon a declaration by the Secretary of Health and Human Services, a compensation fund would be created to provide "timely, uniform, and adequate compensation to eligible individuals for covered injuries directly caused by the administration or use of a covered countermeasure." The "covered injuries" to which the program applies are defined as serious physical injuries or death. Individuals are permitted to bring a willful misconduct action against a manufacturer only after they have exhausted their remedies under the compensation program. A willful misconduct action could be brought against us if an individual(s) has exhausted their remedies under the compensation program which thereby could expose us to liability. Furthermore, there is no assurance that the Secretary of Health and Human Services will issue under this act a declaration to establish a compensation fund. We may also become subject to standard product liability suits and other third party claims if products we develop which fall outside of the Public Readiness Act cause injury or if treated individuals subsequently become infected or otherwise suffer adverse effects from such products.

We are required to comply with certain export control laws, which may limit our ability to sell our products to non-U.S. persons and may subject us to regulatory requirements that may delay or limit our ability to develop and commercialize our products.

Our product candidates are subject to the Export Administration Regulations ("EAR") administered by the U.S. Department of Commerce and are, in certain instances (such as regarding aspects of our Protexia® product candidate) subject to the International Traffic in Arms Regulations ("ITAR") administered by the U.S. Department of State. EAR restricts the export of dual-use products and technical data to certain countries, while ITAR restricts the export of defense products, technical data and defense services. The U.S. government agencies responsible for administering EAR and ITAR have significant discretion in the interpretation and enforcement of these regulations. Failure to comply with these regulations can result in criminal and civil penalties and may harm our ability to enter into contracts with the U.S. government. It is also possible that these regulations could adversely affect our ability to sell our products to non-U.S. customers.

Risks Related to Personnel

We depend on our key technical and management personnel, and the loss of these personnel could impair the development of our products.

We rely, and will continue to rely, on our key management and scientific staff, all of whom are employed at-will. The loss of key personnel or the failure to recruit necessary additional qualified personnel could have a material adverse effect on our business and results of operations. There is intense competition from other companies, research and academic institutions and other organizations for qualified personnel. We may not be able to continue to attract and retain the qualified personnel necessary for the development of our business. If we do not succeed in retaining and recruiting necessary personnel or developing this expertise, our business could suffer significantly.

In particular, as noted above in "*Even if we succeed in commercializing our product candidates, they may not become profitable and manufacturing problems or side effects discovered at later stages can further increase costs of commercialization,*" we are transferring the manufacturing process for the bulk rPA drug substance from Avecia in the United Kingdom to a U.S.-based contract manufacturer. In connection with that transfer, we also anticipate moving our U.K.-

based operations to the United States by June 30, 2010. There can be no assurance that we will be able to recruit and hire the necessary staff in the U.S. to complete the transfer of activities in a timely and cost effective manner.

Biotechnology companies often become subject to claims that they or their employees wrongfully used or disclosed alleged trade secrets of the employees' former employers. Such litigation could result in substantial costs and be a distraction to our management.

As is commonplace in the biotechnology industry, we employ individuals who were previously employed at other biotechnology or pharmaceutical companies, including at competitors or potential competitors. Although no claims against us are currently pending, we may be subject to claims that we or our employees have inadvertently or otherwise used or disclosed

trade secrets or other proprietary information of their former employers. Litigation may be necessary to defend against these claims. Even if we are successful in defending against these claims, litigation could result in substantial costs and distract management.

Risks Related to our Common Stock

Shares that we may issue in the future in connection with certain capital-raising transactions and shares available for future issuance upon conversion and exercise of convertible notes, warrants and options could dilute our shareholders and depress the market price of our common stock.

We will likely seek to raise additional capital and may do so at any time through various financing alternatives, including potentially selling shares of common or preferred stock, notes and/or warrants convertible into, or exercisable for, shares of common or preferred stock. Even following the registered offering of securities completed on March 27, 2009, we could again rely upon the shelf registration statement on Form S-3, which was declared effective on February 12, 2009, in connection with a sale from time to time of common stock, preferred stock or warrants or any combination of those securities, either individually or in units, in one or more offerings for up to $50,000,000 (inclusive of the gross proceeds from our recent public offering of $5.5 million and the $2.1 million we would receive if all of the warrants issued in that offering were exercised). Raising capital in this manner or any other manner may depress the market price of our stock, and any such financing(s) will dilute our existing shareholders.

In addition, as of June 30, 2009, we had outstanding options to purchase approximately 4.4 million shares of common stock. Additional shares are reserved for issuance under our 2007 Long-Term Incentive Compensation Plan. Our stock options are generally exercisable for ten years, with a significant portion exercisable either immediately or beginning one year after the date of the grant. Furthermore, the 10% Convertible Notes in the aggregate principal amount of $19.3 million are convertible at $2.541667 per share into between approximately 7.6 million and approximately 9.1 million shares of our common stock, depending on when the notes are converted, and the accompanying warrants are exercisable for up to approximately 2.6 million shares of common stock at $2.50 per share. Finally, as of August 12, 2009, the Company had issued and outstanding additional warrants to purchase up to an additional 3.6 million shares of common stock. The issuance or even the expected issuance of a large number of shares of our common stock upon conversion or exercise of the securities described above could depress the market price of our stock and the issuance of such shares will dilute the stock ownership of our existing shareholders.

If we are unable to continue to satisfy the listing requirements of NYSE Amex, our securities could be delisted from trading which could limit investors' ability to make transactions in our securities and subject us to additional trading restrictions.

Our common stock is listed on the NYSE Amex (formerly the NYSE Alternext US or American Stock Exchange), a national securities exchange, which imposes continued listing requirements with respect to listed shares. If we fail to satisfy one or more of the requirements, such as the policy that issuers that have had losses in their five most recent fiscal years have stockholders' equity of at least $6,000,000, that issuers have more than 300 public shareholders, or that the aggregate market value of shares publicly held be more than $1,000,000, the NYSE Amex may decide to delist our common stock. If the NYSE Amex delists our securities from trading on its exchange and we are not able to list our securities on another exchange or to have them quoted on Nasdaq, our securities could be quoted on the OTC Bulletin Board or on the "pink sheets". As a result, we could face significant adverse consequences including:

- a limited availability of market quotations for our securities;
- a determination that our common stock is a "penny stock" which will require brokers trading in our common stock to adhere to more stringent rules and possibly result in a reduced level of trading activity in the secondary trading market for our securities;
- a limited amount of news and analyst coverage for us; and
- a decreased ability to issue additional securities or obtain additional financing in the future.

In addition, a delisting by the NYSE Amex of our securities from trading may trigger an event of default under the 10% Convertible Notes, in which case holders of not less than a majority of the aggregate principal amount of the notes then outstanding may declare the notes immediately due and payable.

We can make no assurances that we will ever pay dividends.

We have not paid any dividends on our common stock in 2007, 2008, and the first half of 2009 and do not intend to declare any dividends in the foreseeable future. While subject to periodic review, our current policy is to retain all earnings, if any, primarily to finance our future growth. We make no assurances that we will ever pay dividends, cash or otherwise. Whether we pay any dividends in the future will depend on our financial condition, results of operations, and other factors that we will consider.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. This information may involve known and unknown risks, uncertainties and other factors that are difficult to predict and may cause our actual results, performance or achievements to be materially different from future results, performance or achievements expressed or implied by any forward-looking statements. These risks, uncertainties and other factors include, but are not limited to, risk associated with the reliability of the results of the studies relating to human safety and possible adverse effects resulting from the administration of the Company's product candidates, unexpected funding delays and/or reductions or elimination of U.S. government funding for one or more of the Company's development programs, including without limitation our bid related to SparVax™ under the DHHS Request for Proposals for an Anthrax Recombinant Protective Antigen (rPA) Vaccine for the Strategic National Stockpile, the award of government contracts to our competitors, unforeseen safety issues, challenges related to the development, technology transfer, scale-up, and/or process validation of manufacturing processes for our product candidates, unexpected determinations that these product candidates prove not to be effective and/or capable of being marketed as products, as well as risks detailed from time to time in PharmAthene's Forms 10-K and 10-Q under the caption "Risk Factors" and in its other reports filed with the U.S. Securities and Exchange Commission (the "SEC"). Forward-looking statements describe management's current expectations regarding our future plans, strategies and objectives and are generally identifiable by use of the words "may," "will," "should," "expect," "anticipate," "estimate," "believe," "intend," "project," "potential" or "plan" or the negative of these words or other variations on these words or comparable terminology. Such statements include, but are not limited to, statements about potential future government contract or grant awards, potential payments under government contracts or grants, potential regulatory approvals, future product advancements, anticipated financial or operational results and expected benefits from our acquisition of the biodefense vaccines business ("Avecia Acquisition") from Avecia Biologics Limited and certain of its affiliates ("Avecia"). Forward-looking statements are based on assumptions that may be incorrect, and we cannot assure you that the projections included in the forward-looking statements will come to pass.

We have based the forward-looking statements included in this prospectus on information available to us on the date of this prospectus, and we assume no obligation to update any such forward-looking statements. Although we undertake no obligation to revise or update any forward-looking statements, whether as a result of new information, future events or otherwise, you are advised to consult any additional disclosures that we may make directly to you or through reports that we, in the future, may file with the SEC, including Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K.

USE OF PROCEEDS

We have received proceeds of approximately $10.5 million in connection with the issuance of the 10% Convertible Notes and warrants and we will receive the exercise price of $2.50 per share upon exercise of any warrants. We will use any proceeds from the exercise of the warrants for the satisfaction of existing obligations and for general working capital. We will not receive any of the proceeds from the sale of our common stock offered by the selling stockholders named in this prospectus.

SELLING STOCKHOLDERS

An aggregate of up to 11,685,031 shares of our common stock will be registered for resale by the selling stockholders under this prospectus, including (i) up to 9,112,256 shares of common stock issuable upon conversion of all of the 10% Convertible Notes issued to investors pursuant to the Note and Warrant Purchase Agreement, and (ii) 2,572,775 shares of our common stock issuable upon exercise of all of the warrants issued pursuant to that agreement. Of the 9,112,256 shares of common stock issuable upon conversion of the 10% Convertible Notes, up to 7,591,780 shares are issuable in respect of the aggregate principal amount of the notes and up to 1,520,476 shares are issuable in respect of interest that accrues on the notes, assuming conversion of all of the notes on the date of maturity. All of the shares referred to in (i) and (ii) above were issued or will be issued by us, if at all, pursuant to exemptions from registration under Section 4(2) of the Securities Act. The description of the 10% Convertible Notes and the warrants is set forth in our Current Reports on Form 8-K and Form 8-K/A filed with the SEC on July 30, 2009 and August 3, 2009, respectively, and are incorporated herein by reference.

To the extent permitted by law, the selling stockholders listed below may resell shares pursuant to this prospectus. We have registered the sale of the shares to permit the selling stockholders and their respective permitted transferees or other successors in interest that receive their shares from the selling stockholders after the date of this prospectus to resell the shares.

The following table sets forth the name of the selling stockholders, the number and percentage of shares of our common stock beneficially owned by each of the selling stockholders as of August 25, 2009(1) and immediately after the offering (assuming that all shares offered in this prospectus are sold) and the number of shares of our common stock being offered by the selling stockholders (assuming conversion of all of the notes on the date of maturity). The selling stockholders may sell all, some or none of the shares being offered. Accordingly, no estimate can be given as to the number of shares that will be held by the selling stockholders upon consummation of any sales. In addition, the selling stockholders listed in the table below may have acquired, sold or transferred, in transactions exempt from registration, some or all of their shares since the date as of which the information in the table is presented.

All information with respect to share ownership has been furnished by the selling stockholders, obtained from our transfer agent and/or obtained from certain beneficial ownership filings made by the selling stockholders with the SEC. Each selling stockholder that is an affiliate of a broker-dealer has informed us that it purchased the shares being registered for resale in the ordinary course of business and at the time of such purchase, it had no agreements or understandings, directly or indirectly, with any person to distribute the shares. From time to time, additional information concerning ownership of the shares of common stock may rest with holders of the shares not named in the table below and of whom we are unaware.

	Number of Shares Beneficially Owned Prior to the Offering(1)		Number of Shares Being Offered		Shares Beneficially Owned After the Offering(1)	
Name of Selling Stockholder	Number(2)	Percentage	Underlying Notes(3)	Underlying Warrants(4)	Number(2)	Percentage
Healthcare Ventures VII, L.P.(5)	4,218,938	14.38%	995,238	280,998	3,369,726	11.83%
MPM Asset Management Investors 2004 BVIII LLC, MPM Bioventures III, L.P., MPM Bioventures III GmbH & Co. Beteiligungs KG, MPM Bioventures III Parallel Fund, L.P. and MPM Bioventures III-QP, L.P.(6)	5,692,905	18.59%	2,582,359	729,108	3,489,443	12.27%
David Wright(7)	877,581	3.03%	29,173	8,237	852,688	2.95%
Ronald W. Kaiser	8,841	*	4,501	1,271	5,000	*
Ontario Teachers' Pension Plan Board	1,177,862	4.08%	480,846	135,763	767,568	2.70%

Jerome Parks	24,893	*	29,173	8,237	0	0%
Joel McCleary(8)	195,914	*	19,948	5,633	178,893	*
Eric Richman(9)	274,986	*	7,770	2,194	268,356	*
Baker Brothers Investments II, L.P., Baker Brothers Life Sciences, L.P. and 14159, L.P.(10)	3,658,830	11.71%	3,305,682	933,334	838,175	2.95%

	Number of Shares Beneficially Owned Prior to the Offering(1)		Number of Shares Being Offered		Shares Beneficially Owned After the Offering(1)	
Name of Selling Stockholder	Number(2)	Percentage	Underlying Notes(3)	Underlying Warrants(4)	Number(2)	Percentage
Derace Schaffer(11)	1,144,115	3.96%	472,240	133,333	741,164	2.60%
James H. Desnick	201,475	*	236,120	66,667	0	0%
Edward F. Heil	201,475	*	236,120	66,667	0	0%
R.J. Vassiliou	315,590	1.11%	94,448	26,667	235,000	*
Ann Vassiliou Children's Trust	170,885	*	141,672	40,000	50,000	*
Mary L. Pappajohn(12)	402,951	*	472,240	133,333	0	0%
Christopher Camut(13)	204,424	*	4,722	1,333	200,394	*
TOTAL	**18,766,665**		9,112,256	2,572,775	**10,991,407**	

* Less than 1%

(1) Based on 28,427,950 shares of our common stock outstanding as of August 25, 2009. Beneficial ownership is determined in accordance with the rules and regulations of the SEC. In computing the number of shares beneficially owned by a person and the percentage ownership of that person, shares of our common stock underlying warrants, shares of our common stock underlying the principal amount of 10% Convertible Notes or subject to options held by that person that are currently exercisable/convertible or exercisable/convertible within 60 days of the date hereof, are deemed outstanding. Such shares, however, are not deemed outstanding for the purposes of computing the percentage ownership of any other person. Except as indicated pursuant to applicable community property laws, each stockholder named in the table has sole voting and investment power with respect to the shares set forth opposite such stockholder's name.

(2) In accordance with the definition of beneficial ownership, this number (i) includes the shares issuable in respect of the principal amount of the 10% Convertible Notes and the shares issuable in respect of interest on such notes that will accrue within 60 days of August 25, 2009 and (ii) does not include shares of common stock issuable upon exercise of the warrants. The warrants are not exercisable until January 28, 2010.

(3) The number of shares underlying the 10% Convertible Notes in this column represents the sum of (i) the shares issuable in respect of the principal amount of the notes held by an investor and (ii) the shares issuable in respect of interest that accrues on the notes, assuming that the investor converts all of its notes on the date of maturity. If an investor converts notes prior to maturity, a lesser number of shares will be issued in respect of accrued interest.

(4) The warrants are not exercisable until, and the shares of common stock underlying the warrants therefore will not be issued prior to, January 28, 2010.

(5) Includes 849,211 shares issuable upon conversion of the 10% Convertible Notes (including shares underlying interest that will accrue within 60 days of August 25, 2009), the shares issuable upon exercise of the warrants and the shares underlying the options mentioned below. Dr. James Cavanaugh, a member of our Board of Directors, is a general partner of HealthCare Partners VII, L.P., which is the general partner of HealthCare Ventures VII, L.P. In such capacity he may be deemed to share voting and investment power with respect to these shares. Dr. Cavanaugh disclaims beneficial ownership of these shares except to the extent of his proportionate pecuniary interest therein. Dr. Cavanaugh owns options to purchase 52,483 shares of common stock which were exercisable as of August 25, 2009 or will be exercisable within 60 days thereof and are therefore included in this number (out of a total of 52,759 options held by Dr. Cavanaugh). The remaining general partners of HealthCare Partners VII, L.P. are Dr. Christopher Mirabelli, Mr. Harold Werner, Mr. Augustine Lawlor and Mr. John Littlechild.

(6) Includes 2,203,461 shares issuable upon conversion of the 10% Convertible Notes (including shares underlying interest that will accrue within 60 days of August 25, 2009) and the shares issuable upon exercise of the warrants. MPM BioVentures III GP, L.P. and MPM BioVentures III LLC are the direct and indirect general partners of MPM BioVentures III-QP, L.P., MPM BioVentures III GmbH & Co. Beteiligungs KG, MPM BioVentures III, L.P. and MPM BioVentures III Parallel Fund, L.P. The Series A members of MPM BioVentures III LLC and managers of MPM Asset Management Investors 2004 BVIII LLC are Luke Evnin, Ansbert Gadicke, Nicholas Galakatos, Dennis

Henner, Nicholas Simon III, Michael Steinmetz and Kurt Wheeler, who disclaim beneficial ownership of these shares except to the extent of their proportionate pecuniary interest therein. Dr. Steven St. Peter, a member of our Board of Directors, is affiliated with the MPM Funds, but is not a member of the general partners and thus is not deemed to have beneficial ownership of the shares owned by the MPM Funds.

(7) Includes 137,185 restricted shares (included herein irrespective of the vesting date), options to purchase 478,188 shares of common stock (representing the portion of options to purchase a total of 999,388 shares of common stock that was exercisable as of August 25, 2009 or will become exercisable within 60 days thereof), 24,893 shares issuable upon conversion of the 10% Convertible Notes (including shares underlying interest that will accrue within 60 days of August 25, 2009) and the shares issuable upon exercise of the warrants. Mr. Wright is our President and Chief Executive Officer and a member of our Board of Directors.

(8) Includes options to purchase 77,483 shares of common stock (representing the portion of options to purchase a total of 102,759 shares of

common stock that was exercisable as of August 25, 2009 or will become exercisable within 60 days thereof), 17,021 shares issuable upon conversion of the 10% convertible Notes (including shares underlying interest that will accrue within 60 days of August 25, 2009) and the shares issuable upon exercise of the warrants. Mr. McCleary is a member of our Board of Directors.

(9) Includes 60,573 restricted shares (included herein irrespective of vesting date), options to purchase a total of 207,783 shares of common stock (representing the portion of options to purchase a total of 343,046 shares of common stock that was exercisable as of August 25, 2009 or will become exercisable within 60 days thereof), 6,630 shares issuable upon conversion of the 10% Convertible Notes (including shares underlying interest that will accrue within 60 days of August 25, 2009) and the shares issuable upon exercise of the warrants.

(10) Includes 838,175 shares of our common stock, 2,820,655 shares issuable upon conversion of the 10% Convertible Notes (including shares underlying interest that will accrue within 60 days of August 25, 2009) and the shares issuable upon exercise of the warrants. The Notes and warrants are only convertible to the extent that the holders thereof and their affiliates would beneficially own, for purposes of Section 13(d) of the Securities Exchange Act of 1934, as amended, no more than 9.999% of the outstanding shares of common stock of PharmAthene, Inc. after conversion. As a result of this restriction, the number of shares that may be issued on conversion of the notes by the above holders may change depending upon changes in the outstanding shares. The number of shares issuable upon conversion of the Notes and warrants held by any particular Baker Bros. affiliate will also depend upon the extent to which the Notes and warrants held by other Baker Bros. affiliates have theretofore been converted.

(11) Includes options to purchase 50,000 shares of common stock, 402,950 shares issuable upon conversion of the 10% Convertible Notes (including shares underlying interest that will accrue within 60 days of August 25, 2009) and the shares issuable upon exercise of the warrants. Dr. Schaffer is a member of our Board of Directors.

(12) Mary L. Pappajohn is the spouse of John Pappajohn, who is the Chairman of our Board of Directors.

(13) Includes 49,308 restricted shares (included herein irrespective of vesting date), options to purchase a total of 151,086 shares of common stock (representing the portion of options to purchase a total of 284,480 shares of common stock that was exercisable as of August 25, 2009 or will become exercisable within 60 days thereof), 4,029 shares issuable upon conversion of the 10% Convertible Notes (including shares underlying interest that will accrue within 60 days of August 25, 2009) and the shares issuable upon exercise of the warrants.

PLAN OF DISTRIBUTION

The shares covered by this prospectus may be offered and sold from time to time by the selling stockholders. The term “selling stockholder” includes pledgees, donees, transferees or other successors in interest selling shares received after the date of this prospectus from each selling stockholder as a pledge, gift, partnership distribution or other non-sale related transfer. The number of shares beneficially owned by a selling stockholder will decrease as and when it effects any such transfers. The plan of distribution for the selling stockholders’ shares sold hereunder will otherwise remain unchanged, except that the transferees, pledgees, donees or other successors will be selling stockholders hereunder. To the extent required, we may amend and supplement this prospectus from time to time to describe a specific plan of distribution.

The selling stockholders will act independently of us in making decisions with respect to the timing, manner and size of each sale. The selling stockholders may make these sales at prices and under terms then prevailing or at prices related to the then current market price. The selling stockholders may also make sales in negotiated transactions. The selling stockholders may offer their shares from time to time pursuant to one or more of the following methods:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- one or more block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- publicly or privately negotiated transactions;
- on the NYSE Amex (or through the facilities of any national securities exchange or U.S. inter-dealer quotation system of a registered national securities association, on which the shares are then listed, admitted to unlisted trading privileges or included for quotation);
- through underwriters, brokers or dealers (who may act as agents or principals) or directly to one or more purchasers;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

In connection with distributions of the shares or otherwise, the selling stockholders may:

- enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the shares in the course of hedging the positions they assume;
- sell the shares short and redeliver the shares to close out such short positions;
- enter into option or other transactions with broker-dealers or other financial institutions which require the delivery to them of shares offered by this prospectus, which they may in turn resell; and

- pledge shares to a broker-dealer or other financial institution, which, upon a default, they may in turn resell.

In addition to the foregoing methods, the selling stockholders may offer their shares from time to time in transactions involving principals or brokers not otherwise contemplated above, in a combination of such methods or described above or any other lawful methods. The selling stockholders may also transfer, donate or assign their shares to lenders, family members and others and each of such persons will be deemed to be a selling stockholder for purposes of this prospectus. The selling stockholders or their successors in interest may from time to time pledge or grant a security interest in some or all of the shares of common stock, and if the selling stockholders default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of common stock from to time under this prospectus; provided however in the event of a pledge or then default on a secured obligation by the selling stockholder, in order for the shares to be sold under this

registration statement, unless permitted by law, we must distribute a prospectus supplement and/or amendment to this registration statement amending the list of selling stockholders to include the pledgee, secured party or other successors in interest of the selling stockholder under this prospectus.

The selling stockholders may also sell their shares pursuant to Rule 144 under the Securities Act, which permits limited resale of shares purchased in a private placement subject to the satisfaction of certain conditions.

Sales through brokers may be made by any method of trading authorized by any stock exchange or market on which the shares may be listed or quoted, including block trading in negotiated transactions. Without limiting the foregoing, such brokers may act as dealers by purchasing any or all of the shares covered by this prospectus, either as agents for others or as principals for their own accounts, and reselling such shares pursuant to this prospectus. The selling stockholders may effect such transactions directly, or indirectly through underwriters, broker-dealers or agents acting on their behalf. In effecting sales, broker-dealers or agents engaged by the selling stockholders may arrange for other broker-dealers to participate. Broker-dealers or agents may receive commissions, discounts or concessions from the selling stockholders, in amounts to be negotiated immediately prior to the sale (which compensation as to a particular broker-dealer might be in excess of customary commissions for routine market transactions).

In offering the shares covered by this prospectus, the selling stockholders, and any broker-dealers and any other participating broker-dealers who execute sales for the selling stockholders, may be deemed to be “underwriters” within the meaning of the Securities Act in connection with these sales. Any profits realized by the selling stockholders and the compensation of such broker-dealers may be deemed to be underwriting discounts and commissions.

The Company is required to pay all fees and expenses incident to the registration of the shares.

The Company has agreed to indemnify the selling stockholders against certain losses, claims, damages and liabilities, including liabilities under the Securities Act.

LEGAL MATTERS

Sonnenschein Nath & Rosenthal, LLP, New York, New York, will pass upon the validity of the common stock offered pursuant to this prospectus.

EXPERTS

Ernst & Young LLP, independent registered public accounting firm, has audited our consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2008, as set forth in their report, which is incorporated by reference in this prospectus and elsewhere in the registration statement. Our financial statements are incorporated by reference in reliance on Ernst & Young LLP’s report, given on their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the informational reporting requirements of the Exchange Act and file annual, quarterly and special reports, proxy statements and other information with the SEC. You may read and copy any materials we file with the SEC at the SEC’s Public Reference Room located at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the Public Reference Room. You may also access filed documents at the SEC’s website at www.sec.gov.

INCORPORATION BY REFERENCE

We are incorporating by reference important business and financial information about us that we file with the SEC. Any information that we incorporate by reference is considered part of this prospectus. Information that we file with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of the initial registration statement and prior to effectiveness of such registration statement as well as after the date of this prospectus and prior to the termination of the offering shall be deemed incorporated by reference in this prospectus and shall be deemed to be a part of this prospectus from the date of filing of such documents and reports.

We incorporate by reference the following documents we have filed, or may file, with the SEC:

- our Annual Report on Form 10-K for the year ended December 31, 2008 (File No. 001-32587);
- Amendment No. 1 to our Annual Report on Form 10-K/A for the year ended December 31, 2008 (File No. 001-32587);
- our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2009 and June 30, 2009 (File No. 001-32587);

- our Current Reports on Form 8-K and/or 8-K/A filed with the SEC on January 27, 2009, March 24, 2009, March 27, 2009, March 30, 2009, April 16, 2008, April 23, 2009, April 28, 2009, April 30, 2009, May 15, 2009, June 23, 2009, July 16, 2009, July 30, 2009, August 3, 2009, August 6, 2009, August 13, 2009 and August 17, 2009;

- our Preliminary Proxy Statement filed with the SEC on June 18, 2009, including any amendments or supplements filed for the purpose of updating same; and

- all documents filed by us with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus and before the termination of this offering.

- the description of our common stock contained in our registration statement on Form 8-A filed with the SEC on July 27, 2005, including any amendments or reports filed for the purpose of updating such description, including the description of the Company's securities set forth in the Definitive Proxy Statement filed with the SEC on July 16, 2007, on page 159 under the caption "Description of Securities."

To the extent that any information contained in any Current Report on Form 8-K, or any exhibit thereto, is furnished to, rather than filed with, the SEC, such information or exhibit is specifically not incorporated by reference in this prospectus.

We make available free of charge through our website at www.pharmathene.com our press releases and all of the documents that we are required to file electronically with the SEC, including all amendments thereto, as soon as reasonably practical after they are electronically filed with, or furnished to, the SEC. Our website also contains our Code of Ethics. The information on our website is not part of nor incorporated by reference into this prospectus. You may also read and copy any materials we file with the SEC at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. You may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC also maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers, like PharmAthene, that file electronically with the SEC at http://www.sec.gov.

In addition, we will provide, without charge to each person, including any beneficial owner, to whom this prospectus is delivered, upon written or oral request of such person, a copy of any or all of the documents incorporated by reference in this prospectus other than exhibits, unless such exhibits specifically are incorporated by reference into such documents or this prospectus. Requests for such documents should be addressed in writing or by telephone to: PharmAthene, Inc., One Park Place, Suite 450, Annapolis, MD 21401, (410) 269-2600.

PART II. INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution.

The following table sets forth the estimated expenses payable by the Registrant in connection with the sale and distribution of the securities registered hereby:

SEC Registration Fee	$	1,292.35
Accounting Fees and Expenses	$	10,000
Legal Fees and Expenses	$	25,000
Printing Fees and Expenses	$	5,000
Miscellaneous	$	3,707.65
Total:	$	45,000

Item 15. Indemnification of Officers and Directors.

Our certificate of incorporation provides that the Company, to the full extent permitted by Section 145 of the Delaware General Corporation Law, as amended from time to time, shall indemnify all persons whom it may indemnify pursuant thereto. It further provides that expenses (including attorneys' fees) incurred by an officer or director in defending any civil, criminal, administrative, or investigative action, suit or proceeding for which such officer or director may be entitled to indemnification hereunder shall be paid by the Company in advance of the final disposition of such action, suit or proceeding upon receipt of an undertaking by or on behalf of such director or officer to repay such amount if it shall ultimately be determined that he is not entitled to be indemnified by the Company as authorized thereby.

Our bylaws provide the Company with the power to indemnify its officers, directors, employees and agents or any person serving at the Company's request as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise to the fullest extent permitted by Delaware law.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to the Registrant's directors, officers, and controlling persons pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment of expenses incurred or paid by a director, officer or controlling person in a 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 the court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

All of our directors and officers are covered by insurance policies maintained by the Company against certain liabilities for actions taken in their capacities as such, including liabilities under the Securities Act.

Item 16. Exhibits.

See the index to exhibits, which is incorporated herein by reference.

Item 17. Undertakings.

(A) The undersigned Registrant hereby undertakes:

(1) to file, during the 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 the 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 end 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;

(iii) to include any material information with respect to the plan of distribution not previously disclosed in the Registration Statement or any material change to such information in the Registration Statement;

provided, however, that paragraphs (A)(1)(i), (A)(1)(ii) and (a)(1)(iii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or 15(d) of the Exchange Act that are incorporated by reference in the Registration Statement or is contained in a form of prospectus pursuant to Rule 424(b) that is part of the 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 therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof; and

(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.

(B) 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 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 the Registration Statement shall be deemed to be a new Registration Statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

(C) 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 Securities 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 Annapolis, State of Maryland on August 27, 2009.

PHARMATHENE, INC.
(Registrant)

By: /s/ David P. Wright
David P. Wright
Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, each of the undersigned constitutes and appoints David P. Wright, Charles A. Reinhart III and Jordan P. Karp, and each of them, as attorneys-in-fact and agents, with full power of substitution and resubstitution, for and in the name, place and stead of the undersigned, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this Registration Statement or any Registration Statement for this offering that is to be effective upon the filing pursuant to Rule 462(b) under the Securities Act of 1933, as amended, and all 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 attorneys-in-fact and agents 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 to all intents and purposes as the undersigned might or could do in person, hereby ratifying and confirming all that each of said attorney-in-fact or substitute or substitutes, 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 indicated, on August 27, 2009.

Signature	Title
/s/ David P. Wright David P. Wright	Chief Executive Officer and Director (Principal Executive Officer)
/s/ Charles A. Reinhart III Charles A. Reinhart III	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)
/s/ John Pappajohn John Pappajohn	Chairman of the Board
/s/ Derace Schaffer, MD Derace Schaffer, MD	Director
/s/ John M. Gill John Gill	Director

/s/ James H. Cavanaugh, Ph.D. James H. Cavanaugh, Ph.D.	Director
/s/ Steven St. Peter, M.D. Steven St. Peter, M.D.	Director
/s/ Joel McCleary Joel McCleary	Director

Index to Exhibits

Exhibit No.	Description
3.1	Amended and Restated Certificate of Incorporation, incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K, filed June 19, 2008 (File No. 001-32587).
3.2	By-laws, incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K, filed May 2, 2008 (File No. 001-32587).
4.1	Form of 10% Unsecured Senior Convertible Note, incorporated by reference to Exhibit 4.9 to the Registrant's Current Report on Form 8-K/A, filed August 3, 2009 (File No. 001-32587).
4.2	Form of Warrant To Purchase Common Stock, incorporated by reference to Exhibit 4.10 to the Registrant's Current Report on Form 8-K/A, filed August 3, 2009 (File No. 001-32587).
5.1	Opinion of Sonnenschein, Nath & Rosenthal LLP.
10.1	Note and Warrant Purchase Agreement, dated as of July 24, 2009 by and among PharmAthene, Inc. and the investors named therein, as amended by Amendment No. 1 to Note and Warrant Purchase Agreement, dated as of July 26, 2009 and Amendment No. 2 to Note and Warrant Purchase Agreement, dated as of July 28, 2009, incorporated by reference to Exhibit 10.50 to the Registrant's Current Report on Form 8-K/A, filed August 3, 2009 (File No. 001-32587).
10.2	Registration Rights Agreement, dated as of July 26, 2009 by and among PharmAthene, Inc. and the investors named therein, incorporated by reference to Exhibit 10.51 to the Registrant's Current Report on Form 8-K/A, filed August 3, 2009 (File No. 001-32587).
23.1	Consent of Sonnenschein, Nath & Rosenthal LLP (included in Exhibit 5.1).
23.2	Consent of Ernst & Young, LLP, independent registered public accounting firm.
24.1	Powers of Attorney (included on the signature page of this Registration Statement).

Exhibit 5.1

1221 Avenue of the Americas
New York, NY 10020
212.768.6700
212.768.6800 fax
www.sonnenschein.com

August 27, 2009

PharmAthene, Inc.
One Park Place
Suite #450
Annapolis, MD 21401

Re: Registration Statement on Form S-3

Ladies and Gentlemen:

In our capacity as counsel to PharmAthene, Inc., a Delaware corporation (the "**Company**"), we have been asked to render this opinion in connection with a registration statement on Form S-3 (the "**Registration Statement**"), being filed contemporaneously herewith by the Company with the Securities and Exchange Commission (the "**Commission**") under the Securities Act of 1933, as amended (the "**Act**"), covering (i) 9,112,256 shares (the "**Note Shares**") of common stock, par value $0.0001 per share, of the Company (the "**Common Stock**") that are issuable upon the conversion of certain 10% convertible notes heretofore issued by the Company (the "**Notes**"), assuming conversion of all Notes on the maturity date thereof, and (ii) 2,572,775 shares (the "**Warrant Shares**") of Common Stock that are issuable upon exercise of certain warrants heretofore issued by the Company (the "**Warrants**"). The Note Shares and the Warrant Shares have been included in the Registration Statement for the account of the persons identified therein as the Selling Stockholders.

We are delivering this opinion to you at your request in accordance with the requirements of Item 601(b)(5) of Regulation S-K under the Act.

In connection with rendering this opinion, we have examined and are familiar with (i) the Company's Amended and Restated Certificate of Incorporation, as amended, (ii) the Company's By-Laws, (iii) the Registration Statement, (iv) corporate proceedings of the Company relating to the Notes, the Note Shares, the Warrants and the Warrant Shares, and (v) such other instruments and documents as we have deemed relevant under the circumstances.

In making the aforesaid examinations, we have assumed the genuineness of all signatures and the conformity to original documents of all copies furnished to us as original or photostatic copies. We have also assumed that the corporate records furnished to us by the Company include all corporate proceedings taken by the Company to date.

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

1. The Note Shares have been duly and validly authorized and, when issued in accordance with the terms of the Notes, will be duly and validly issued, fully paid and non-assessable.

2. The Warrant Shares have been duly and validly authorized and, when issued and paid for in accordance with the terms of the Warrants, will be duly and validly issued, fully paid and non-assessable.

The foregoing opinion is limited to the laws of the United States of America and Delaware corporate law (which includes the Delaware General Corporation Law and applicable provisions of the Delaware constitution, as well as reported judicial opinions interpreting same), and we do not purport to express any opinion on the laws of any other jurisdiction.

We hereby consent to the use of our opinion as an exhibit to the Registration Statement and to the reference to this firm and this opinion under the heading "Legal Matters" in the prospectus comprising a part of the Registration Statement and any amendment thereto. In giving such consent, we do not hereby admit that we come within the category of persons whose consent is required under Section 7 of the Act, or the rules and regulations of the Commission thereunder.

Very truly yours,

/s/ Sonnenschein Nath & Rosenthal LLP
SONNENSCHEIN NATH & ROSENTHAL LLP

Exhibit 23.2

Consent of Independent Registered Public Accounting Firm

We consent to the reference to our firm under the caption "Experts" in the Registration Statement (Form S-3 No. 333-00000) and related Prospectus of PharmAthene, Inc. for the registration of 11,689,469 shares of its common stock and to the incorporation by reference therein of our report dated March 30, 2009, with respect to the consolidated financial statements of PharmAthene, Inc., included in its Annual Report (Form 10-K) for the year ended December 31, 2008, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

McLean, Virginia
August 26, 2009