

PROSPECTUS



# PharmAthene

**5,607,696 Shares of Common Stock**  
**2,745,098 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 16 of this prospectus) of up to 8,352,794 shares of our common stock, par value \$0.0001 per share, including (i) 3,733,334 shares of common stock issued to Kelisia Holdings Ltd. pursuant to the Securities Purchase Agreement, dated as of September 30, 2008 (which we refer to as the "Securities Purchase Agreement"), between PharmAthene, Inc. and Kelisia Holdings Ltd., (ii) 2,745,098 shares of our common stock issuable upon exercise of warrants with a fixed exercise price of \$5.10 per share issued pursuant to the Securities Purchase Agreement (which we refer to as the "\$5.10 warrants"); (iii) 1,363,426 shares of our common stock acquired by two members of our Board of Directors prior to the initial public offering of Healthcare Acquisition Corp. (n/k/a PharmAthene, Inc.); and (iv) 510,936 shares of our common stock acquired by certain stockholders pursuant to separate purchase option agreements, dated August 3, 2007.

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" beginning on page 17 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 Alternext US under the symbol "PIP." On February 11, 2009, the last reported sale price per share of common stock on that exchange was \$2.41.

**Investing in our common stock involves certain risks. You should read the entire prospectus and any accompanying prospectus supplement, as well as any documents incorporated by reference in this prospectus and such prospectus supplement, carefully before you make your investment decision. See "Risk Factors" beginning on page 3 and in other documents that are incorporated by reference in this prospectus and any accompanying prospectus supplement.**

**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 February 17, 2009.

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## 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 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 front cover of this prospectus, that information appearing in any applicable prospectus supplement is accurate only as of the date of that prospectus supplement and that information contained in any document incorporated by reference in this prospectus and any prospectus supplement 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.

This prospectus incorporates important business and financial information about us that is not included nor delivered with this document. This information is available without charge on the SEC's website at [www.sec.gov](http://www.sec.gov) or upon written or oral request to PharmAthene, Inc., One Park Place, Suite 450, Annapolis, MD 21401, (410) 269-2600.

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 with Former PharmAthene and to the business of Former PharmAthene prior to the Merger, and "HAQ" refers to the business of Healthcare Acquisition Corp. 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

PharmAthene is a biodefense company engaged in the development and commercialization of medical countermeasures against biological and chemical weapons. In addition to our own efforts, we collaborate with pharmaceutical companies to support clinical development of product candidates. 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.

For the next several years, we believe our main customer will be national governments, primarily the U.S. Government. Currently, the U.S. Government may, at its discretion, purchase critical biodefense products for the U.S. Strategic National Stockpile prior to FDA approval based on Emergency Use Authorization enabled under the Project Bioshield legislation. On an ongoing basis we monitor notices for requests for proposal, grants and other potential sources of government funding that could potentially support the development and commercialization of our product candidates. Nevertheless, changes in government budgets, priorities and agendas as well as political pressures could result in a reduction in overall government financial support for the biodefense sector in general and/or specifically the product candidates we are developing. Our existing contracts with the government typically contain provisions that permit the government unilaterally to cancel or reduce the scope of these contracts. (For further information, see “Risk Factors — Risks Related to Our Business — U.S. government agencies have special contracting requirements which give them the ability to unilaterally control our contracts.”) As a result, further development of our product candidates and ultimate product sales to the government could be delayed or stopped altogether.

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

2

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## RISK FACTORS

*Investing in our securities involves risks. In addition to the other information in this prospectus, you should carefully consider the following risks before making an investment decision. 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 and financial results could be harmed. In that case, the trading price of our common stock could decline. You should also refer to the information set forth in our other filings with the SEC, including our most recent annual report on Form 10-K or quarterly report on Form 10-Q, as the case may be.*

### **Risks Related to Our Business**

***If we do not receive the award by the U.S. Department of Health and Human Services for an rPA anthrax vaccine, our operations may decline and we may be placed at a competitive disadvantage.***

On February 29, 2008, the U.S. Department of Health and Human Services (DHHS) issued a formal Request for Proposal (RFPBARDA-0801 5) 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 December 31, 2008, DHHS subsequently delayed the award date 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 subsequently denied that protest, and based on correspondence we have received from DHHS, we believe that an award may be made in the first quarter of 2009. Nevertheless, there can be no assurance that DHHS will not again extend the time line for issuing an award.

We are currently aware of at least one bidder for the award with substantially greater financial and other resources, manufacturing capabilities and commercialization capabilities than we have. 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 lead to a decline in our operations and 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 a procurement.

***It is expected that PharmAthene will incur net losses and negative cash flow for the foreseeable future, and we cannot guarantee that we will achieve profitability; therefore, our business, results of operations and financial condition may be materially adversely affected.***

We have incurred significant losses since we commenced operations. For the fiscal year ended December 31, 2007, the Company incurred an operating loss of approximately \$16.5 million and had an accumulated deficit of approximately \$87.4 million at December 31, 2007. For the nine months ended September 30, 2008, the Company incurred an operating loss of approximately \$30.5 million and had an accumulated deficit of approximately \$118.6 million at September 30, 2008. The Company’s losses to date have resulted principally from research and development costs related to the development of its product candidates, general and administrative costs related to its operations, and costs related to the Avecia Acquisition.

As a result of our continuing losses and the Avecia Acquisition, we may need to seek additional financing. Our available cash and cash equivalents at September 30, 2008 was approximately \$10.1 million. However, at September 30, 2008, we had outstanding debt to noteholders of approximately \$12.9 million, approximately \$6.0 million outstanding under our credit facility and, in connection with the Avecia Acquisition, we have agreed to pay \$7 million upon the earlier of the consummation of a financing transaction in which we receive gross proceeds of not less than \$15 million or eighteen months after the closing of the acquisition. Accordingly, to the extent that our losses continue at the current level, if we do not access sufficient additional funding through contracts and grants with the U.S. or foreign governments and we do not defer or renegotiate repayment of the outstanding Notes, we will need to engage in one or more additional financing transactions by no later than August 3, 2009, the current maturity date of the Notes. 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. As a result, there can be no assurances that we will be successful in obtaining sufficient financing on commercially reasonable terms or at all.

3

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***We expect that PharmAthene will incur substantial losses for the foreseeable future as a result of increases in its research and development costs, including costs associated with conducting preclinical testing, clinical trials and regulatory compliance activities.***

The Company's likelihood for achieving profitability will depend on numerous factors, including success in:

- developing and testing new product candidates;
- carrying out the Company's intellectual property strategy;
- establishing the Company's 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 slower 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.***

In consideration for the Avecia Acquisition, we agreed to pay Avecia the following:

- \$10 million at the time of the consummation of the acquisition; plus
- an additional \$7 million payable upon the earlier to occur of (a) the completion of a financing transaction in which PharmAthene receives gross proceeds of not less than \$15 million and (b) eighteen months after the consummation of the Avecia Acquisition, which payment is secured by a letter of credit; plus
- additional contingent amounts payable upon the occurrence of certain events as follows:
  - \$3 million upon the entry by PharmAthene into a multi-year funded contract or series of contracts with the US Department of Defense (or other agency or representative or sub-contractor of the US government) or the Defence Science Technology Laboratory, an agency of the UK Ministry of Defence (or any other agency or representative or sub-contractor of the US or UK government) for the further development of Avecia's pneumonic and bubonic plague ("rYP") vaccine, RypVax<sup>TM</sup>, with a total committed aggregate value in excess of \$30 million; and
  - \$10 million upon the entry by PharmAthene into a multi-year funded contract with the US Department of Defense (or other agency or representative or sub-contractor of the US Government) for the further development of the RypVax<sup>TM</sup> rYP vaccine, as a result of (a) a Resources Allocation Decision of the Resource Allocation Review Board and the Resource Allocation Advisory Committee of the US Department of Defense or (b) some other similar substantial funding in excess of \$150 million (including the value of any option elements within such contract); and
  - \$5 million upon the entry by PharmAthene into a multi-year funded development contract to be issued by the Biological Advanced Research and Development Authority (part of the US Department of Health and Human Services) under solicitation number RFP-BARDA-08-15 for the further development of Avecia's anthrax (rPA) vaccine, SparVax<sup>TM</sup>; and
  - \$5 million upon the entry by PharmAthene into a contract or contracts for the supply of rPA vaccine, SparVax<sup>TM</sup>, into the Strategic National Stockpile; and

4

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- 2.5% of net sales (as defined under the Purchase Agreement) of rPA vaccine, SparVax<sup>TM</sup>, made by PharmAthene to the US Government within the period of ten years from the consummation of the Avecia Acquisition after the first 25 million doses; and
  - 1% of net sales (as defined under the Purchase Agreement) of third generation anthrax vaccine made by PharmAthene to the US Government within the period of ten years from the consummation of the Avecia Acquisition.

PharmAthene is a party to a \$10 million secured credit facility bearing interest at an annual rate of 11.5% evidenced by the Loan Agreement with the Lenders which required consent of the Lenders to the Avecia Acquisition. Consequently, PharmAthene obtained the consent of its Lenders to the acquisition and entered into the Loan Modification Agreement, in connection with which PharmAthene maintains, at a segregated account at the Lenders unrestricted and unencumbered cash or cash equivalents in the amount of at least one and one-quarter times the principal amount of its obligations outstanding to the Lenders.

As a result of the Avecia Acquisition and the Loan Modification Agreement, we have less available cash to use for operations, working capital or additional acquisitions, and may be required to raise additional capital or debt financing for same. Our inability to raise additional capital or to obtain adequate financing, if necessary, would result in the need to reduce the pace of implementing our business objectives and could be materially harmful to our business, which would force us to curtail or cease our business operations. As a consequence, our stock price could fall.

***PharmAthene is in various stages of product development and there can be no assurance of successful commercialization.***

PharmAthene has not commercialized any products or recognized any revenues from product sales. In general, our research and development programs are at early stages. To obtain FDA approval for our biological warfare defense products under current FDA regulations, the Company will be required to

perform two animal model studies for efficacy and provide animal and human safety data. The Company's other products will be subject to the relevant approval guidelines under FDA requirements, which include a number of phases of testing in humans. Even if PharmAthene initially receives positive early stage pre-clinical or clinical results, such results may not be indicative of similar results that could be anticipated in the later stages of drug development.

Our drug candidates will require significant additional research and development efforts, including extensive pre-clinical and clinical testing and regulatory approval, prior to commercial sale. We cannot be sure that our approach to drug discovery will be effective or will result in the development of any drug. In addition, applicable laws, regulations, and policies may change, and our products may be subject to new legislation or regulations that may delay or suspend research and development. PharmAthene cannot assure you that any drugs resulting from our research and development efforts will be commercially available. Even if we succeed in developing and commercializing our product candidates, the Company may never generate sufficient or sustainable revenues to enable us to be profitable. Furthermore, even if our product candidates are successful when tested in animals, such success would not be a guarantee of the effectiveness and safety of such product candidates in humans. There can be no assurances that one or more of the Company's 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. There can be no assurances that any such product candidates will prove to be effective in humans.

***Most of PharmAthene's immediately foreseeable future revenues are contingent upon grants and contracts from the US Government and collaborative and license agreements and the Company may not achieve sufficient revenues from these agreements to attain profitability.***

Until and unless PharmAthene successfully markets a product, our ability to generate revenues will largely depend on our ability to enter into additional collaborative agreements, strategic alliances, research grants, contracts and license agreements with third parties, including, without limitation, the US Government and branches and agencies thereof, and maintain the agreements we currently have in place. Substantially all of the revenues of the Company to date have been derived from grants and government contracts, primarily with the US Government. There can be no assurances that existing government contracts will be renewed or that we can enter into new contracts or receive new grants. For example, our existing contracts for the advanced development of plague vaccine, RypVax<sup>TM</sup>, expires in the first half of 2009, and future government funding for this development program remains uncertain at this time. Furthermore, under the terms of our 2006 contract with the DoD regarding Protexia<sup>®</sup>, the DoD may elect not to continue development assistance of this nerve agent countermeasure after initial funding of \$41million has been received, or, if it does so elect to continue funding and we meet all development milestones, it may nevertheless choose not to procure any doses of Protexia<sup>®</sup> under the procurement portion of the contract.

The Company has an agreement with Medarex, Inc., to develop Valortim<sup>®</sup>, a fully human monoclonal antibody product designed to protect against and treat inhalation anthrax. Under the agreement with Medarex, the Company will be entitled to a variable percentage of profits derived from sales of Valortim<sup>®</sup>, if any, depending, in part, on the amount of its investment. In addition, the Company has 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 product candidates capable of generating revenues for the Company.

***PharmAthene may need additional capital in the future. If additional capital is not available or not available on commercially reasonable terms, the Company may be forced to delay or curtail the development of our product candidates.***

PharmAthene's requirements for additional capital may be substantial and will depend on many other factors, including:

- continued funding by the DoD and other branches and agencies of the US Government;
- payments received under present or future collaborative partner agreements;
- continued progress of research and development of the Company's products;
- the Company's ability to license compounds or products from others;
- costs associated with protecting the Company's intellectual property rights;
- development of marketing and sales capabilities; and
- market acceptance of the Company's products.

To the extent PharmAthene's capital resources are insufficient to meet future capital requirements, it will have to raise additional funds to continue the development of our product candidates. To the extent that our losses continue at the current level, if we do not access sufficient additional funding through contracts and grants with the US or foreign governments and we do not defer or renegotiate repayment of the outstanding Notes, we will need to engage in one or more additional financing transactions by no later than August 3, 2009, the current maturity date of the Notes. 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. As a result, there can be no assurances that we will be successful in obtaining sufficient financing on commercially reasonable terms or at all. To the extent the Company raises additional capital through the sale of securities, the issuance of those securities could result in dilution which may be substantial to the Company's stockholders. In addition, if the Company incurs 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 the Company's business activities. If adequate funds are not available, the Company may be required to curtail significantly our development and commercialization activities.

***Drug development is an expensive and uncertain process, and delay or failure can occur at any stage of PharmAthene's development process, increasing our development costs and/or adversely affecting the commercial prospects of our product candidates.***

To develop and commercialize biodefense treatment and drug candidates, the Company must provide the FDA and foreign regulatory authorities with clinical and non-clinical data that demonstrate adequate safety and effectiveness. This involves engaging in clinical trials, which is a lengthy and expensive process, the outcome of which is uncertain. Because humans are not normally exposed to anthrax, nerve agents, plague, smallpox or other lethal biotoxins or chemical agents and it would be unethical to expose humans to such, effectiveness of the Company's biodefense product candidates cannot be demonstrated in humans, but instead, under the FDA's "Animal Rule" (see Code of Federal Regulations (21 CFR 601 Subpart H)), can be demonstrated, in part, by utilizing animal models. This effect has to be demonstrated in more than one animal species expected to be predictive of a response in humans, but an effect in a single animal species may be acceptable if that animal model is sufficiently well-characterized for predicting a response in humans. The animal study endpoint must be clearly related to the desired benefit in humans and the information obtained from animal studies allows selection of an effective dose in humans.

For many of the biological and chemical threats, the animal models are not available, and as such the Company will have to develop appropriate animal models, a time-consuming research effort. Further, we may not be able to sufficiently demonstrate the animal correlation to the satisfaction of the FDA, as

these correlates are difficult to establish and are often unclear. 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. Finally, 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 in countries other than the United States, 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.

Delays in obtaining results can occur for a variety of reasons such as slower than anticipated enrollment by volunteers in the trials, adverse events related to the products and unsatisfactory results of any trial. Any delay or adverse clinical event arising during any of our clinical trials could force the Company to abandon a product altogether or to conduct additional clinical trials in order to obtain approval from the FDA and other regulatory bodies. The Company’s development costs will increase substantially if it experiences material delays in any clinical trials or if it needs to conduct more or larger trials than planned.

Additionally, few facilities in the US 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 as well. As such, PharmAthene may not be able to secure contracts to conduct the testing in a predictable timeframe or at all. Further, if delays are significant, or if any of the Company’s products do not prove to be safe, pure, and potent (including efficacy) or do not receive required regulatory approvals, the Company will be unable to recognize revenues from the sale of products, and the commercial prospects for our product candidates will be adversely affected.

***Even if the Company completes the development of our nerve agent, plague and anthrax products, if the Company fails to obtain contracts to supply products to the US or foreign governments or the US or foreign governments do not purchase sufficient quantities of our products, PharmAthene may be unable to generate sufficient revenues to continue operations.***

For the next several years, we believe our main customer will be national governments, primarily the U.S. Government. The US Government has undertaken commitments to help secure improved countermeasures against bioterrorism including the stockpiling of treatments and vaccines for anthrax, plague and nerve agents through the SNS and other military stockpiling efforts. However, the process of obtaining government contracts is lengthy and uncertain and the Company will have to compete with other companies for each contract. There can be no assurances that the Company will be awarded any contracts to supply the US or other governments with our products as such awards may be made, in whole or in part, to the Company’s competitors. If the US Government makes significant future contract awards for the supply of our emergency stockpile to PharmAthene’s competitors, the Company’s business will be harmed, and it is unlikely that the Company 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 may result in a decreased and de-prioritized emphasis on procuring the biodefense products PharmAthene is developing. In addition, government contracts typically contain provisions that permit cancellation in the event that funds become unavailable to the governmental agency. If the US or foreign governments make significant future contract awards to the Company’s competitors to the exclusion of the Company or otherwise fail to purchase the Company’s products, it is unlikely that the Company will ultimately be able to commercialize that particular treatment or product or that it will be able to generate sufficient revenues to continue operations.

Due to the current economic downturn and the US Government’s efforts to stabilize the economy, the US 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.

***US Government agencies have special contracting requirements which give them the ability to unilaterally control our contracts.***

PharmAthene anticipates that our primary sales will be to the US Government. US Government contracts typically contain unfavorable termination provisions and are subject to audit and modification by the government at its sole discretion, which will subject the Company to additional risks. These risks include the ability of the US Government to unilaterally:

- suspend or prevent the Company 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 PharmAthene’s contracts;
- reduce the scope and value of PharmAthene’s contracts;
- audit and object to the Company’s contract-related costs and fees, including allocated indirect costs;
- control and potentially prohibit the export of the Company’s products; and
- change certain terms and conditions in the Company’s contracts.

The US Government will be able to terminate any of its contracts with the Company either for its convenience or if the Company defaults by failing to perform in accordance with the contract schedule and terms. Termination for convenience provisions would generally enable the Company to recover only the Company’s 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 the Company liable for excess costs incurred by the US Government in procuring undelivered items from another source.

Due to the current economic downturn and the US Government’s efforts to stabilize the economy, the US Government may be forced or choose to reduce or delay spending in the biodefense field, which could decrease the likelihood that the government will exercise its right to extend any of its existing contracts with us or to procure products from us.

***PharmAthene may fail to fully realize the potential of Valortim<sup>®</sup> and of our co-development arrangement with our partner in the development of Valortim<sup>®</sup> which would have an adverse affect upon our business.***

PharmAthene and our development partner have completed the first Phase I clinical trial for Valortim<sup>®</sup> without any reported adverse reactions. However, before we may begin selling any doses of Valortim<sup>®</sup>, we will need to conduct a more comprehensive Phase I trial in a significantly larger group of human subjects. The Company will be required to expend a significant amount to scale up manufacturing capability through a contract manufacturer in order to conduct the more extensive clinical trials. If the Company's contract manufacturer is unable to produce sufficient quantities at a reasonable cost, or has any other obstacles to production, such as violative manufacturing, then the Company will be unable to commence the clinical trials necessary to begin marketing Valortim<sup>®</sup>. Even after the Company expends sufficient funds to complete the development of Valortim<sup>®</sup> and when and if it enters into an agreement to supply Valortim<sup>®</sup> to the US Government, it will be required to share any and all profits from the sale of products with our partner in accordance with a pre-determined formula.

***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 trials, non-clinical animal efficacy studies, and such 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 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 FDA's "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 pre-qualify 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 drug 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 the failure of these third parties to perform successfully or our inability to find suitable manufacturing sites could harm our business.***

We have utilized, and intend to continue utilizing, third parties to manufacture, package and distribute our product candidates. We do not have any manufacturing facilities. Any material disruption in manufacturing could cause a delay in our development programs and potentially future sales. Furthermore, certain compounds, media, or other raw materials used to manufacture our drug candidates are available from 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 (for instance, their inability to meet strict manufacturing specifications) could significantly delay or disrupt our commercialization activities. Similarly, if such third parties have capacity limitations, we may not be able to manufacture and commercialize our products at the rate we would otherwise deem desirable.

***If PharmAthene cannot enter into new licensing arrangements, our ability to develop a diverse product portfolio could be limited and our ability to compete would be harmed.***

A key component of the Company's business strategy is in-licensing compounds and products developed by other pharmaceutical and biotechnology companies or academic research laboratories. Competition for promising compounds or products can be intense. If the Company is not able to identify new licensing opportunities or enter into other licensing arrangements on acceptable terms, it may be unable to develop a diverse portfolio of products.

Our plan to use collaborations to leverage our capabilities and to grow in part through the strategic acquisition of other companies and technologies may not be successful if we are unable to integrate our partners' capabilities or the acquired companies with our operations or if our partners' capabilities do not meet our expectations.

As part of our strategy, we intend to continue to evaluate strategic partnership opportunities and consider acquiring complementary technologies and businesses. In order for our future collaboration efforts to be successful, we must first identify partners whose capabilities complement and integrate well with ours. Technologies to which we gain access may prove ineffective or unsafe. Our current agreements that grant us access to such technology may expire and may not be renewable or could be terminated if we or our partners do not meet our obligations. These agreements are subject to differing interpretations, and we and our partners may not agree on the appropriate interpretation of specific requirements. 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.

In order 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 this 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 which 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.

***PharmAthene faces, 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. The Company's 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 also are many companies, 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 companies 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 are being developed by the Company or may obtain FDA approval for products more rapidly.

If the Company commences 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 companies also have manufacturing facilities and established marketing capabilities that would enable such companies to market competing products through existing channels of distribution. The Company's commercial opportunities will be reduced or eliminated if our competitors develop and market products for any of the harmful effects that it targets 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 the Company will be developing.

9

Further, the regulatory climate for generic versions of biological products approved under a Biological License Application (BLA) in the U.S. remains uncertain. 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 the Company is successful in developing effective products, and obtains 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 PharmAthene may develop, alone or with our collaborators, making our products obsolete, or that are marketed before any products that the Company develops are marketed.

Companies that are developing products that would compete with the Company's products include: Avant Immunotherapeutics, Inc., which has vaccine programs for agents of biological warfare, including plague and anthrax; Human Genome Sciences, Inc., Elusys Therapeutics, Inc. and Avanis Pharmaceuticals, Inc., all of which are developing monoclonal antibodies as anthrax treatments. Other competitors of the Company include: Emergent Biosolutions Inc., BioSante Pharmaceuticals, Inc., Dynport Vaccine Company, LLC and Ligocyte Pharmaceuticals, Inc.

***Political or social factors may delay or impair PharmAthene's 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 the Company's products to market or limit pricing of our products, which would harm the Company's business.

***The US Government's determination to award any contracts to the Company may be challenged by an interested party, such as another bidder, at the General Accounting Office 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 US Government provide procedures by which other bidders and other interested parties may challenge the award of a government contract. In the event that the Company is awarded a government contract, such 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 the Company's performance under the contract while such protests are being considered by the General Accounting Office or the applicable federal court, thus potentially delaying delivery of goods and services and payment. In addition, the Company could be forced to expend considerable funds to defend any potential award. If a protest is successful, the government may be ordered to terminate the Company's contract at our convenience and reselect bids. The government could even be directed to award a potential contract to one of the other bidders.

#### **Legal and Regulatory Risks of Development Stage Biotechnology Companies**

***PharmAthene's commercial success will be affected significantly by our ability to obtain protection for our proprietary technology and that of our licensors and collaborators and not infringe the patents and proprietary rights of third parties.***

The patent position of biotechnology firms generally is highly uncertain and involves complex legal and factual questions. To date, no consistent policy has emerged regarding the breadth of claims allowed in biotechnology patents. PharmAthene currently holds two US patents, has three pending US patent applications, and has 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 the Company will result in patents being issued or that the patents, 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 the Company or our collaborators and limit the ability of the Company or that of our collaborators to obtain meaningful patent protection.

Further, the commercial success of PharmAthene will depend significantly on our ability to operate without infringing the patents and proprietary rights of third parties. The Company is aware of one US patent covering recombinant production of an antibody. Although PharmAthene believes that Valortim<sup>®</sup>, which is a monoclonal antibody and uses recombinant

reproduction of antibodies, does not infringe any valid claim of such patent, the Company cannot provide any assurances that if a legal action based on such patent was to be brought against the Company or our distributors, licensees or collaborators, that the Company or our distributors, licensees or collaborators would prevail or that PharmAthene has sufficient funds or resources to defend such claims. The Company is 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, PharmAthene, our licensors or collaborators may be legally prohibited from researching, developing or commercializing such products or be required to obtain licenses to these patents or to develop or obtain alternative technology. The Company, our licensors and/or our collaborators may be legally prohibited from using patented technology, may not be able to obtain any license to the patents and technologies of third parties on acceptable terms, if at all, or may not be able to obtain or develop alternative technologies.

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 outcome is favorable. An outcome of any patent prosecution or litigation that is unfavorable to PharmAthene or one of our licensors or collaborators may have a material adverse effect on the Company. The expense of a protracted infringement suit, even if ultimately favorable, would also have a material adverse effect on the Company.

***Any inability to protect PharmAthene's intellectual property could harm our competitive position and adversely affect our business.***

PharmAthene's success will depend, in part, on our ability to obtain patents and maintain adequate protection of other intellectual property for our technologies and products in the US and other countries. If the Company does not adequately protect our intellectual property, competitors may be able to use our technologies and erode or negate our competitive advantages. Further, the laws of some foreign countries will not protect the Company's proprietary rights to the same extent as the laws of the U.S., and the Company may encounter significant problems in protecting our proprietary rights in these foreign countries.

The patent positions of pharmaceutical and biotechnology companies, including the Company's patent positions, involve complex legal and factual questions and, therefore, validity and enforceability cannot be predicted with certainty. Patents may be challenged, deemed unenforceable, invalidated or circumvented. PharmAthene will be able to protect our proprietary rights from unauthorized use by third parties only to the extent that it covers our proprietary technologies with valid and enforceable patents or that it effectively maintains such proprietary technologies as trade secrets. The Company will apply for patents covering our technologies and product candidates as it deems appropriate. PharmAthene may fail to apply for patents on important technologies or products in a timely fashion, or at all, and in any event, the applications the Company files may be challenged and may not result in issued patents. Any future patents the Company obtains may not be sufficiently broad to prevent others from practicing our technologies or from developing competing products. Furthermore, others may independently develop similar or alternative technologies or design around the Company's patented technologies. In addition, if challenged, the Company's patents may be declared invalid. Even if valid, the Company's patents may fail to provide it with any competitive advantages.

PharmAthene relies upon trade secrets protection for our confidential and proprietary information. The Company has taken measures to protect our proprietary information; however, these measures may not provide adequate protection to the Company. The Company has sought to protect their proprietary information by entering into confidentiality agreements with employees, collaborators and consultants. Nevertheless, employees, collaborators or consultants may still disclose the companies' proprietary information, and the Company 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 the Company's trade secrets.

***PharmAthene's use of hazardous materials and chemicals require it to comply with regulatory requirements which may result in significant costs and expose PharmAthene to potential liabilities.***

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

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

PharmAthene faces an inherent risk of exposure to product liability suits in connection with our product candidates being tested in human clinical trials or sold commercially. The Company may become subject to a product liability suit if any product it develops causes injury, or if treated individuals subsequently become infected or otherwise 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 the Company's reputation, withdrawal of clinical trial volunteers and loss of revenues.

If a product liability claim is brought against the Company, the cost of defending the claim could be significant and any adverse determination may result in liabilities in excess of our insurance coverage. Additionally, the Company will be applying for indemnification under the Support Anti-terrorism by Fostering Effective Technologies 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, the Company cannot be certain that it will be able to obtain or maintain adequate insurance coverage on acceptable terms, if at all.

***Legislation limiting or restricting liability for medical products used to fight bioterrorism is new, and PharmAthene cannot be certain that any such protection will apply to all of our products and, therefore, PharmAthene could become subject to product liability suits and other third party claims if such protections do not apply.***

The Public Readiness and Emergency Preparedness Act ("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 Secretary of Defense 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.

Upon a declaration by the Secretary of Health and Human Services, a compensation fund is 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.” There is no assurance, however, that the Secretary of Health and Human Services will issue such a declaration. 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 one or more individuals have exhausted their remedies under the compensation program, which thereby could expose us to liability. PharmAthene may also become subject to standard product liability suits and other third party claims if its products fall outside of the scope of the Public Readiness Act cause injury or if treated individuals subsequently become infected or otherwise suffer adverse effects from such products.

***PharmAthene may be subject to claims that it or our 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, the Company employs individuals who were previously employed at other biotechnology or pharmaceutical companies, including their competitors or potential competitors. Although no claims against the Company are currently pending, the Company may be subject to claims that these employees or it 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 the Company is successful in defending against these claims, litigation could result in substantial costs and be a distraction to management.

***If we experience delays in obtaining regulatory approvals, or are unable to obtain or maintain regulatory approvals, PharmAthene may be unable to commercialize any products.***

The Company will need to conduct a substantial amount of additional preclinical and clinical research and development before any US or foreign regulatory authority will approve any of our products. In addition, the Company’s product candidates will be subject to extensive and rigorous government regulation. Results of the Company’s research and development activities may indicate that our potential products are unsafe or ineffective. In this case, regulatory authorities will not approve them. Even if approved, the Company’s products may not be commercially successful. If the Company fails to develop and commercialize our products, it may be forced to curtail or cease operations.

In addition, the commencement and rate of completion of clinical trials for the Company’s products may be delayed by many factors, including:

- lack of efficacy during the clinical trials in animals;

12

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- unsatisfactory results of any clinical trial;
  - failure to comply with Good Clinical Practices;
  - unforeseen safety issues;
  - slower than expected rate of patient recruitment; or
  - government or regulatory delays.

Delays in obtaining regulatory approvals may:

- adversely affect the commercialization of any products that the Company or our collaborative partners develop;
- impose costly procedures on the Company or our collaborative partners;
- diminish any competitive advantages that the Company or our collaborative partners may attain; and
- adversely affect the Company’s receipt of revenues or royalties.

The results from preclinical testing and early clinical trials are often not predictive of results obtained in later clinical trials. Although a new product may show promising results in initial clinical trials, it may subsequently prove unfeasible or impossible to generate sufficient safety and efficacy data to obtain necessary regulatory approvals. Data obtained from preclinical and clinical studies are susceptible to varying interpretations, which may delay, limit or prevent regulatory approval. In addition, the Company may encounter regulatory delays or rejections as a result of many factors, including results that do not support our claims, perceived defects in the design of clinical trials and changes in regulatory policy during the period of product development. The Company’s business, financial condition, prospects and results of operations may be materially adversely affected by any delays in, or termination of, our clinical trials or a determination by the FDA that the results of the Company’s trials are inadequate to justify regulatory approval.

Any required approvals, once obtained, may be suspended or revoked. Further, if the Company fails to comply with applicable FDA and other regulatory requirements at any stage during the regulatory process, it may encounter difficulties including:

- delays in clinical trials or commercialization;
- product recalls or seizures;
- suspension of production and/or distribution;
- revocation of previously approved marketing applications; and
- injunctions, civil penalties and criminal prosecutions.

PharmAthene’s 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. If we fail to obtain required governmental approvals, we or our collaborative partners will experience delays in, or be precluded from, marketing products developed through it or, as applicable, their research.

PharmAthene and our contract manufacturers 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 before the Company will be able to use them in commercial manufacturing of our products. The Company and our contract manufacturers may not be able to comply with the applicable cGMP

requirements and other FDA regulatory requirements. If the Company and our contract manufacturers fail to comply, we could be subject to fines or other sanctions, or be precluded from marketing our products.

***PharmAthene may be required to perform additional clinical trials or change the labeling of our products if we or others identify side effects after our products are on the market. Such events could harm sales of the affected products.***

If the Company or others identify side effects after any of our products are on the market, or if manufacturing problems occur:

- regulatory approval may be revoked;
- reformulation of the affected products, additional clinical trials, or changes in labeling of the Company's products may be required;
- changes to or re-approvals of the Company's manufacturing facilities may be required;
- sales of the affected products may drop significantly;
- the Company's reputation in the marketplace may suffer; and

13

- lawsuits, including class action suits, may be brought against the Company.

Any of the above occurrences could harm or prevent sales of the affected products or could increase the costs and expenses of commercializing and marketing these products.

### **Risks Related to PharmAthene's 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 seek to raise additional capital and may do so at any time through various financing alternatives, including the sale of shares of common or preferred stock, or notes or warrants convertible into or exercisable for shares of common or preferred stock. Raising capital in this manner may depress the market price of our stock and any such financing will dilute the stock ownership of our existing shareholders.

In addition, as of September 30, 2008, we had outstanding options to purchase approximately 3.6 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. As of September 30, 2008, we had outstanding debt to noteholders of approximately \$12.9 million in the form of convertible notes, which are convertible at \$10 per share. As of September 30, 2008, we had outstanding warrants exercisable for 9,726,000 shares of common stock. Most of these warrants are exercisable at \$6.00 per share and expire in July 2009. 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.

***NYSE Alternext US may delist the Company's securities from trading which could limit investors' ability to make transactions in our securities and subject us to additional trading restrictions.***

The Company's common stock and certain warrants are listed on the NYSE Alternext US (formerly the American Stock Exchange, or AMEX), 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, NYSE Alternext US may decide to delist our common stock. If the NYSE Alternext US delists the Company's 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, the Company's securities could be quoted on the OTC Bulletin Board, or "pink sheets". As a result, we could face significant adverse consequences including:

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

### **SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS**

This prospectus and other documents we file with the SEC contain 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 (including but not limited to those identified below and in the section "Risk Factors" herein) 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. 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

14

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. Our actual results could differ materially from those expressed or implied by the forward-looking statements as a result of various factors, including, but 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, 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”).

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 will receive the exercise price of \$5.10 per share upon exercise of any \$5.10 warrants. We will use such proceeds, if any, for the satisfaction of existing obligations and for general working capital. We may engage in discussions with respect to the possible acquisition of pharmaceutical products and businesses that are complementary to our own. As of the date of this prospectus, we have no specific plans or commitments with respect to any acquisition. We cannot assure you that we will complete any acquisitions or that, if completed, any acquisition will be successful.

We will not receive any of the proceeds from the sale of our common stock offered by the selling stockholders named in this prospectus.

15

## SELLING STOCKHOLDERS

An aggregate of up to 8,352,794 shares of our common stock will be registered for resale by the selling stockholders under this prospectus, including (i) 3,733,334 shares of our common stock issued to Kelisia Holdings Ltd. pursuant to the Securities Purchase Agreement, (ii) 2,745,098 shares of our common stock issuable to Kelisia Holdings Ltd. upon exercise the \$5.10 warrants; (iii) 1,363,426 shares of our common stock acquired by two members of our Board of Directors prior to the initial public offering of Healthcare Acquisition Corp. (n/k/a PharmAthene, Inc.); and (iv) 510,936 shares of our common stock acquired by certain stockholders pursuant to separate purchase option agreements, dated August 3, 2007. All of the shares referred to in (i) through (iv) above were issued or will be issued by us pursuant to exemptions from registration under Section 4(2) of the Securities Act. The description of the \$5.10 warrants is set forth in our Current Report on Form 8-K filed with the SEC on October 10, 2008 and is 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 of shares of our common stock beneficially owned by each of the selling stockholders as of February 11, 2009 and the number of shares of our common stock being offered by the selling stockholders. The selling stockholders may sell all, some or none of their shares in this offering. 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. The “Shares Beneficially Owned After the Offering” column assumes the sale of all shares offered in this prospectus.

Name of Selling Stockholder	Number of Shares Beneficially Owned Prior to the Offering		Number of Shares Being Offered	Shares Beneficially Owned After the Offering	
	Number	Percentage(1)		Number	Percentage(1)
Kelisia Holdings Ltd(2)	6,478,432	22.6	6,478,432	0	0.0
John Pappajohn(3)	1,103,673	4.2	681,713	421,960	1.6
Derace L. Schaffer(4)	1,083,960	4.1	681,713	402,247	1.5
Steel Partners II, L.P.(5)	1,302,800	5.0	226,206	1,076,594	4.2
Hummingbird Value Fund, LP and Hummingbird SPAC Partners, LP(6)	1,107,117	4.3	259,485	847,632	3.3
Judson A. Cooper	34,786	0.1	25,245	9,541	0.0
<b>TOTAL</b>	<b>11,110,768</b>	<b>—</b>	<b>8,352,794</b>	<b>2,757,974</b>	<b>—</b>

(1) Based on 25,890,143 shares of our common stock outstanding as of December 31, 2008. 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 or 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) Includes 3,733,334 shares of our common stock issued to Kelisia Holdings Ltd. pursuant to the Securities Purchase Agreement and 2,745,098 shares of our common stock issuable to Kelisia Holdings Ltd. upon exercise of the \$5.10 Warrants.
- (3) Includes 141,960 shares of our common stock issuable upon exercise of warrants with a fixed exercise price of \$6.00 per share and options to purchase 20,000 shares of common stock. Includes 230,549 shares of our common stock that remain subject to an option entered into by Mr. Pappajohn with various funds on August 3, 2007 in connection with the merger, which option became exercisable on July 31, 2008; as such, while Mr. Pappajohn has sole voting power over the shares he does not have sole investment power over the shares. Mr. Pappajohn is the Chairman of our Board of Directors.

16

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- (4) Includes 141,960 shares of our common stock issuable upon exercise of warrants with a fixed exercise price of \$6.00 per share and options to purchase 20,000 shares of common stock. Includes 230,549 shares of our common stock that remain subject to an option entered into by Dr. Schaffer with various funds on August 3, 2007 in connection with the merger, which option became exercisable on July 31, 2008; as such, while Dr. Schaffer has sole voting power over the shares he does not have sole investment power over the shares. Dr. Schaffer is a member of our Board of Directors.
- (5) Steel Partners II Master Fund L.P., a Cayman Islands exempted limited partnership (“Steel Master”), is the owner of approximately 99% of the limited partnership interests in WebFinancial L.P., a Delaware limited partnership (“Web L.P.”). Web L.P. is the sole limited partner of Steel Partners II, L.P., a Delaware limited partnership (“Steel Partners II”). Steel Partners LLC, a Delaware limited liability company (“Partners LLC”), is the manager of Web L.P., Steel Partners II and Steel Master. The general partner of Steel Partners II has delegated to Partners LLC the exclusive power to vote and dispose of the securities held by Steel Partners II. Warren G. Lichtenstein is the manager of Partners LLC. By virtue of these relationships, each of Steel Master, Partners LLC, Web L.P. and Mr. Lichtenstein may be deemed to beneficially own the shares of our common stock owned by Steel Partners II. The information in this footnote and in the table (with respect to the number of shares beneficially owned prior to the offering) has been obtained from Steel Partners II’s Schedule 13G/A filed with the SEC on February 9, 2009.
- (6) Hummingbird Management, LLC (“Hummingbird Management”) is the investment manager to each of Hummingbird Value Fund, LP (“Hummingbird Value”) and Hummingbird SPAC Partners, LP (“Hummingbird SPAC”, and together with Hummingbird Value, the “Hummingbird Funds”). Hummingbird Capital, LLC (“Hummingbird Capital”) is the general partner of each of the Hummingbird Funds. Paul D. Sonkin is the managing member of each of Hummingbird Management and Hummingbird Capital. By virtue of these relationships, each of Hummingbird Management, Hummingbird Capital and Mr. Sonkin may be deemed to beneficially own the PharmAthene shares listed here. The information in this footnote and in the table (with respect to the number of shares beneficially owned prior to the offering) has been obtained from Hummingbird Management.

#### PLAN OF DISTRIBUTION

The selling stockholders may, from time to time, sell any or all of their shares of our common stock on any stock exchange, market or trading facility on which the shares are traded or in private transactions. These sales may be at fixed or negotiated prices. The selling stockholders may use any one or more of the following methods when selling shares:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- 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;
- privately negotiated transactions;
- short sales;
- broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

The selling stockholders may also sell shares under Rule 144 under the Securities Act, if available, rather than under this prospectus.

The selling stockholders may also engage in short sales against the box, puts and calls and other transactions in our securities or derivatives of our securities and may sell or deliver shares in connection with these trades.

Broker-dealers engaged by the selling stockholders may arrange for other brokers-dealers to participate in sales. Broker-dealers may receive commissions or discounts from the selling stockholders (or, if any broker-dealer acts as agent for the purchaser of shares, from the purchaser) in amounts to be negotiated. The selling stockholders do not expect these commissions and discounts to exceed what is customary in the types of transactions involved. Any profits on the resale of

17

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shares of our common stock by a broker-dealer acting as principal might be deemed to be underwriting discounts or commissions under the Securities Act. Discounts, concessions, commissions and similar selling expenses, if any, attributable to the sale of shares will be borne by a selling stockholder. The selling stockholders may agree to indemnify any agent, dealer or broker-dealer that participates in transactions involving sales of the shares if liabilities are imposed on that person under the Securities Act.

The selling stockholders may from time to time pledge or grant a security interest in some or all of the shares of our common stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of our common stock from time to time under this prospectus after the Company has filed an amendment to the registration statement or supplement to the prospectus under Rule 424(b)

(3) or other applicable provision of the Securities Act of 1933 amending the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus.

The selling stockholders also may transfer the shares of our common stock in other circumstances, in which case the transferees, pledgees or other successors in interest will be the selling beneficial owners for purposes of the prospectus and may sell the shares of common stock from time to time under the prospectus after the Company has filed an amendment to the registration statement or supplement to the prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act of 1933 amending the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under the prospectus.

The selling stockholders and any broker-dealers or agents that are involved in selling the shares of our common stock may be deemed to be “underwriters” within the meaning of the Securities Act in connection with such sales. In such event, any commissions received by such broker-dealers or agents and any profit on the resale of the shares of our common stock purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act.

The Company is required to pay all fees and expenses incident to the registration of the shares of our common stock, including the fees and disbursements of counsel to the selling stockholders. The Company has agreed to indemnify the selling stockholders against certain losses, claims, damages and liabilities, including liabilities under the Securities Act.

The selling stockholders have advised the Company that they have not entered into any agreements, understandings or arrangements with any underwriters or broker-dealers regarding the sale of their shares of common stock, nor is there an underwriter or coordinating broker acting in connection with a proposed sale of shares of common stock by any selling stockholder. If the Company is notified by any selling stockholder that any material arrangement has been entered into with a broker-dealer for the sale of shares of our common stock, if required, the Company will file a supplement to the prospectus. If the selling stockholders use the prospectus for any sale of the shares of our common stock, they will be subject to the prospectus delivery requirements of the Securities Act.

The anti-manipulation rules of Regulation M under the Securities Exchange Act of 1934 may apply to sales of our common stock and activities of the selling stockholders.

### **DESCRIPTION OF SECURITIES TO BE REGISTERED**

The Company is currently authorized to issue 100,000,000 shares of common stock, par value \$.0001 per share. As of January 26, 2009, there were 26,312,322 shares of common stock outstanding. The Company’s stockholders are entitled to one vote for each share held of record on all matters to be voted on by stockholders except as otherwise provided by law or in any preferred stock designation. The Company’s stockholders have no conversion, preemptive or other subscription rights and there are no sinking fund or redemption provisions applicable to the common stock.

There is no cumulative voting with respect to the election of directors, with the result that the holders of a plurality of the shares voting at the election of directors can elect all of the directors then up for election. The holders of common stock are entitled to receive dividends when, as and if declared by our Board of Directors out of funds legally available therefor. In the event of liquidation, dissolution or winding up of the Company, the holders of common stock are entitled to share in all assets remaining which are available for distribution to them after payment of liabilities and after provision has been made for each class of stock, if any, having preference over the common stock.

The Company’s Amended and Restated Certificate of Incorporation provides that the Board of Directors number no more than eight members, three of whom are appointed by the holders of our 8% Convertible Notes.

#### **Transfer Agent**

The transfer agent and registrar for the common stock is Continental Stock Transfer & Trust Company, New York, New York.

### **LEGAL MATTERS**

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

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### **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, 2007 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](http://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 at a later date pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, and prior to the termination of the offering, shall be deemed to be incorporated by reference in the registration statement and to be part thereof from the date of filing of such information and automatically adds to, updates or supersedes the information listed below.

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

- our Annual Report on Form 10-K/A for the year ended December 31, 2007 (File No. 001-32587);
- our Annual Report on Form 10-K for the year ended December 31, 2007 (File No. 001-32587);
- our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2008, June 30, 2008 and September 30, 2008 and on Form 10-Q/A for the quarter ended June 30, 2008 (File No. 001-32587);
- our Current Reports on Form 8-K and/or 8-K/A filed with the SEC on March 14, 2008, March 26, 2008, April 8, 2008, May 2, 2008, June 18, 2008, June 19, 2008, July 16, 2008, October 1, 2008, October 6, 2008 and January 27, 2009;
- our Definitive Proxy Statement filed with the SEC on May 15, 2008, including any amendments or supplements filed for the purpose of updating same;
- 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; and
- 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](http://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.