[Pharmathene Letterhead]

January 22, 2010

Jim B. Rosenberg
Mary Mast
Tabatha Akins
Division of Corporation Finance
United States Securities and Exchange Commission
100 F Street, N.E.
Washington, D.C. 20549

Re: PharmAthene, Inc.
Form 10-K for the Year Ended December 31, 2008
Form 10-Q for the Period Ended September 30, 2009
File No. 001-32587

Dear Mr. Rosenberg, Ms. Mast and Ms. Akins:

By letter dated December 22, 2009, you provided comments on the Form 10-K for the Year Ended December 31, 2008 ("2008 10-K") and the Form 10-Q for the Period Ended September 30, 2009 ("Third Quarter 10-Q") of PharmAthene, Inc. (the "Company"). This letter sets forth the Company's responses to such comments. For your convenience, we have reproduced below in italics each comment and have provided the Company's response immediately below the comment.

Form 10-K for the Year Ended December 31, 2008

Management's Discussion and Analysis of Financial Condition and Results of Operations, page 47

Results of Operations, page 49

Acquired In-Process Research and Development, page 52

1. *Please disclose the following information relating to the in-process research and development acquired:*

   a. *Disclose the specific nature and fair value of each significant in-process research and development project acquired.*

   b. *Disclose the completeness, complexity and uniqueness of the projects at the acquisition date.*

   c. *Disclose the nature, timing and estimated costs of the efforts necessary to complete the projects, and the anticipated completion dates.*

   d. *Explain the risks and uncertainties associated with completing development on schedule, and consequences if it is not completed timely.*

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   e. *Disclose what appraisal method was used to value the projects.*

   f. *Disclose the significant appraisal assumptions, such as:*

      i. *the period in which material net cash inflows from significant projects are expected to commence;*
      ii. *material anticipated changes from historical pricing, margins and expense levels; and*
      iii. *the risk adjusted discount rate applied to the project's cash flows.*

   g. *In periods after a significant write-off, discuss the status of efforts to complete the projects, and the impact of any delays on your expected investment return, results of operations and financial condition.*

Response

In response to your comment, the Company proposes to replace the paragraph appearing under "Acquired In-Process research and Development" on page 52 of the 2008 10-K with the following disclosure in its annual report on Form 10-K for the year ended December 31, 2009 (the "2009 10-K"):

During the year end December 31, 2008, the Company completed the Avecia Acquisition. The primary asset acquired in the Avecia Acquisition was SparVax™, a second generation rPA anthrax vaccine. The value of the third generation anthrax vaccine acquired in the transaction was aggregated with that of the second generation vaccine because success in developing the third generation anthrax vaccine is contingent on the successful development of the second generation vaccine. At the acquisition date, the aggregate fair value of the second and third generation vaccines was estimated at $16.1 million. An income approach methodology was used to determine the fair value of the acquired in-process research and development asset. This approach assessed the expected cash flows, net of expected appropriate operating expenses, generated from the acquisition date through the end of 2021 (the expected life of the vaccine) using a risk adjusted discount rate commensurate with an early stage, bio-defense product development opportunity. In connection with the transaction, the Company recorded a charge to expense for acquired in-process research and development of $16.1 million for these acquired research projects for which, at the acquisition date, technological feasibility had not been established and no alternative future use existed.

Both vaccines are in their early stages of development and significant remaining research and development is required to establish the technological feasibility of these vaccines. The cost and time required to complete the development of these vaccines and earn FDA marketing approval is highly uncertain

and can vary significantly. During 2009, we provided the US Government with a series of development plans for SparVax™, in response to their request for proposal, which estimated that it would cost in excess of $300 million over approximately 5 years to complete the development of SparVax™.

No such estimates of the advanced development costs and timeline for the third generation vaccine have been developed.

As with all development efforts in the biodefense industry, the development of our second and third generation anthrax vaccines is subject to delays, as described in "*Risk Factors—Necessary Reliance on the Animal Rule in Conducting Trials is Time-Consuming and Expensive"* and "*—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*." 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.

Index to Consolidated Financial Statements, page F-1
Note 2 - Summary of Significant Accounting Policies, F-10

Revenue Recognition, page F-14

2. *Your disclosure of recognizing revenue from cost-plus-fee contracts "to the extent of costs incurred plus an estimate of the applicable fees" is vague. Please revise to clarify when revenue is recognized and how the amount is determined. Also disclose how costs incurred under these agreements are measured and how the applicable fees are estimated.*

Response

In response to your comment, the Company proposes to replace the first three sentences of the first paragraph under the "Revenue Recognition" section on page F-14 of the 2008 10-K with the following disclosure in its annual report on Form 10-K for the year ended December 31, 2009 (the "2009 10-K"):

The Company generates its revenue from two different types of contractual arrangements: cost-plus-fee contracts and cost reimbursable grants. Costs consist primarily of actual internal labor charges and external sub-contractor costs incurred plus an allocation of applied fringe benefits, overhead and general and administrative expenses as defined in the contract. Revenues on cost-plus-fee contracts are recognized in an amount equal to the costs incurred during the period plus an estimate of the applicable fee earned (also as defined in the contract). The Company considers fixed fees under cost-plus-fee contracts to be earned in proportion to the allowable costs incurred in performance of the contract.

Form 10-Q for the Period Ended September 30, 2009

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations, page 13

Liquidity and Capital Resources, page 19

Operating Activities, page 20

3. *We note that your unbilled receivables increased $12.9 million between December 31, 2008 and September 30, 2009. Please revise to disclose the billing terms and to explain why you believe that collectability of the unbilled receivable is assured.*

Response

In response to your comment, the Company proposes to add the following disclosure to the section "Liquidity and Capital Resources--Operating Activities" in the 2009 10-K:

During 2009, our development agreement for SparVax™, our second generation rPA anthrax vaccine, was (1) transferred from NIH to BARDA, (2) novated from our UK subsidiary to the U.S. parent corporation, PharmAthene, Inc., and (3) revised with regard to the scope and timing of work under that agreement. During the period that the changes to our second generation rPA anthrax vaccine contract were being implemented, we agreed with the U.S. Government to delay invoicing under that contract, which resulted in a significant increase in "Other receivables (including unbilled receivables)". We believe that these unbilled receivables represent valid, chargeable program expenses and expect them to be invoiced and collected during 2010.

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The Company hereby acknowledges that:

- the Company is responsible for the adequacy and accuracy of the disclosure in the filings;
- comments by the staff (the "Staff") of the Securities and Exchange Commission (the "Commission") or changes to disclosure in response to Staff comments do not foreclose the Commission from taking any action with respect to the filings; and
- the Company may not assert Staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

If you have any questions, or if we may be of any assistance, please do not hesitate to contact the undersigned at (410) 269-2600 or Jeffrey Baumel or Roland Chase at our outside counsel, Sonnenschein Nath & Rosenthal LLP, at (973) 912-7100.

Very truly yours,

/s/ Charles A. Reinhart III

Charles A. Reinhart III
Senior Vice President and Chief Financial Officer

Cc: Jordan P. Karp, Esq., PharmAthene, Inc.