Table of Contents

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form 10-Q

(Mark One)

x QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended March 31, 2009

or

o TRANSITION REPORT UNDER SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

Commission File Number: 001-32587

PHARMATHENE, INC.

(Exact name of registrant as specified in its charter)

Delaware	**20-2726770**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
One Park Place, Suite 450, Annapolis, MD	**21401**
(Address of principal executive offices)	(Zip Code)

(410) 269-2600
(Registrant's telephone number, including area code)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes x No o

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data file required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes o No o

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

Large Accelerated Filer o	Accelerated Filer o
Non-Accelerated Filer o (Do not check if a smaller reporting company)	Smaller Reporting Company x

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes o No x

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date: The number of shares of the registrant's Common Stock, par value $0.0001 per share, outstanding as of May 13, 2009 was 28,433,503.

Table of Contents

PHARMATHENE, INC.

TABLE OF CONTENTS

Page

Table of Contents

PART I — FINANCIAL INFORMATION

Item 1. Financial Statements

PHARMATHENE, INC.
CONSOLIDATED BALANCE SHEETS

	March 31, 2009 (unaudited)	December 31, 2008
ASSETS		
Current assets:		
Cash and cash equivalents	$ 17,245,420	$ 19,752,404
Restricted cash	9,000,000	12,000,000
Short-term investments	6,773,594	3,190,912
Accounts receivable	9,961,596	8,890,077
Other receivables	1,089,857	1,391,512
Prepaid expenses and other current assets	960,939	917,125
Total current assets	45,031,406	46,142,030
Long-term restricted cash	—	1,250,000
Property and equipment, net	5,211,214	5,313,219
Patents, net	875,098	925,489
Other long-term assets	223,026	220,531
Deferred costs	34,643	37,092
Goodwill	2,348,453	2,502,909
Total assets	$ 53,723,840	$ 56,391,270
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current Liabilities:		
Accounts payable	$ 3,409,022	$ 3,870,871
Accrued expenses and other liabilities	12,197,532	14,624,757
Convertible Notes	13,828,776	13,377,505
Current portion of warrants to purchase common stock	377,753	—
Current portion of long-term debt	3,947,979	4,000,000
Total current liabilities	33,761,062	35,873,133
Other long-term liabilities	2,230,670	626,851
Warrants to purchase common stock, less current portion	1,158,031	—
Long-term debt	—	928,117
Total liabilities	37,149,763	37,427,831
Stockholders' equity:		
Common stock, $0.0001 par value; 100,000,000 shares authorized; 28,012,031 and 25,890,143 shares issued and outstanding, respectively,	2,802	2,589
Additional paid-in capital	146,662,830	142,392,163
Accumulated other comprehensive (loss) income	(260,869)	386,351
Accumulated deficit	(129,830,686)	(123,817,664)
Total stockholders' equity	16,574,077	18,963,439
Total liabilities and stockholders' equity	$ 53,723,840	$ 56,391,270

See the accompanying notes to the consolidated financial statements.

Table of Contents

PHARMATHENE, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS

	Three months ended March 31,	
	2009	2008
	(unaudited)	
Contract revenue	$ 5,521,903	$ 5,819,054
Other revenue	—	21,151
	5,521,903	5,840,205
Operating expenses:		
Research and development	5,695,326	5,929,319
General and administrative	5,145,999	4,357,959
Depreciation and amortization	192,478	196,103
Total operating expenses	11,033,803	10,483,381
Loss from operations	(5,511,900)	(4,643,176)
Other income (expense)		
Interest income	104,245	471,765
Change in market value of warrants	123,674	—
Other expense	(123,841)	—
Interest expense	(602,115)	(666,997)
Change in market value of derivative instruments	(3,085)	89,280
Total other income (expense)	(501,122)	(105,952)
Net loss	$ (6,013,022)	$ (4,749,128)
Basic and diluted net loss per share	$ (0.23)	$ (0.22)
Weighted average shares used in calculation of basic and diluted net loss per share	26,009,387	22,087,121

See the accompanying notes to the consolidated financial statements.

Table of Contents

PHARMATHENE, INC.
CONSOLIDATED STATEMENTS OF CASHFLOWS

	Three months ended March 31,	
	2009	2008
	(unaudited)	
Operating activities		
Net loss	$ (6,013,022)	$ (4,749,128)
Adjustments to reconcile net loss to net cash used in operating activities:		
Change in market value of derivative instruments	3,085	(89,280)
Depreciation and amortization	192,478	204,078
Goodwill	112,173	—
Compensatory option expense	951,560	549,047
Non cash interest expense on debt	468,047	259,653
Changes in operating assets and liabilities:		
Accounts receivable	(1,160,788)	(1,362,006)
Prepaid expenses and other current assets	(168,509)	(207,374)
Accounts payable	(414,221)	46,114
Accrued expenses and other liabilities	(742,539)	76,648
Net cash used in operating activities	(6,771,736)	(5,272,788)
Investing activities		
Purchases of property and equipment	(151,979)	(107,354)
Purchase of letter of credit	—	(7,000,000)
Purchase of available-for-sale investments	(3,982,682)	(2,508,149)
Sales of available-for-sale investments	400,000	8,479,611
Acquisition costs	—	(927,715)
Net cash used in investing activities	(3,734,661)	(2,063,607)
Financing activities		
Payments of long-term debt obligations	(1,000,000)	(1,000,000)
Decrease (increase) of restricted cash requirements	4,250,000	(13,000,000)
Proceeds from issuance of common stock and warrants	4,978,778	—
Net cash provided by (used in) financing activities	8,228,778	(14,000,000)
Effects of exchange rates on cash	(229,364)	(6,983)
Decreases in cash and cash equivalents	(2,506,984)	(21,343,378)
Cash and cash equivalents, at beginning of quarter	19,752,404	40,582,643
Cash and cash equivalents, at end of the quarter	$ 17,245,420	$ 19,239,265
Supplemental disclosure of cash flow information		

Cash paid for interest	$	124,908	$	242,877
Cash paid for income taxes	$	184,226	$	—

See the accompanying notes to the consolidated financial statements.

Table of Contents

PHARMATHENE, INC.
Notes to Consolidated Financial Statements
March 31, 2009
(unaudited)

Note 1 — Organization and Business

Through February 27, 2009, our operations were conducted by our wholly-owned subsidiary, PharmAthene US Corporation. Effective February 27, 2009, PharmAthene US Corporation was merged with and into PharmAthene, Inc., with PharmAthene, Inc. ("PharmAthene", "we", "us", "our" or the "Company") being the surviving corporation.

PharmAthene is a biopharmaceutical company focused on developing biodefense countermeasure applications. The Company is subject to those risks associated with any biopharmaceutical company that has substantial expenditures for research and development. There can be no assurance that the Company's research and development projects will be successful, that products developed will obtain necessary regulatory approval, or that any approved product will be commercially viable. In addition, the Company operates in an environment of rapid technological change and is largely dependent on the services and expertise of its employees, consultants and other third parties.

Note 2 — Summary of Significant Accounting Policies

Basis of Presentation

The financial statements of the Company for the three-month periods ended March 31, 2009 and 2008 are unaudited and include all adjustments which, in the opinion of management, are necessary to present fairly the financial position and results of operations for the periods then ended. These financial statements should be read in conjunction with the financial statements and notes thereto included in our Annual Report of Form 10-K for the year ended December 31, 2008 filed with the Securities and Exchange Commission.

Principles of Consolidation

The consolidated financial statements include the accounts of PharmAthene and its subsidiaries, PharmAthene U.S. Corporation (which merged into PharmAthene effective February 27, 2009), PharmAthene Canada, Inc., which was formed in March 2005, and PharmAthene UK Limited, which was formed in March 2008. All significant intercompany transactions and balances have been eliminated.

Use of Estimates

The preparation of financial statements in conformity with generally accepted accounting principles in the United States requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Segment Information

The Company currently operates in one material business segment. The entire business is comprehensively managed by a single management team that reports to the Chief Executive Officer. The Company does not operate any material separate lines of business or separate business entities with respect to products or product candidates. Accordingly, the Company does not have separately reportable segments as defined by Statement of Financial Accounting Standards No. 131, *Disclosures about Segments of a Enterprise and Related Information*.

Comprehensive Loss

The Company reports comprehensive income (loss) in accordance with the provisions of Statement of Financial Accounting Standards No. 130, *Reporting Comprehensive Income*. Comprehensive income (loss) includes all changes in equity for cumulative translation adjustments resulting from the consolidation of foreign subsidiaries as the financial statements of the subsidiary located outside of the United States are accounted for using the local currency as the functional currency. Additionally, all unrealized gains and losses on short term investments are included in comprehensive loss. Comprehensive loss for the three month periods ended March 31, 2009 and 2008 was approximately $6.7 million and $5.2 million, respectively.

Table of Contents

Foreign currency translation

The functional currency of the Company's wholly owned foreign subsidiaries located in Canada and the United Kingdom are their local currency. Assets and liabilities of the foreign subsidiaries are translated to United States dollars based on exchange rates at the end of the reporting period. Income and expense items are translated at the weighted average exchange rates prevailing during the reporting period. Translation adjustments are accumulated in a separate component of stockholder's equity. Transaction and remeasurement gains or losses are included in the determination of operating results.

Restricted Cash

In connection with the March 31, 2009 Consent and Second Loan Agreement with Silicon Valley Bank and Oxford Finance Corporation (the "Lenders") fully disclosed in Note 8, the Company maintains a segregated account at the Lenders in the amount of at least one half of the principal amount of its obligations outstanding to the Lenders. As of March 31, 2009, the Company classified $2.0 million as short-term restricted cash under the terms of this agreement.

The Company agreed to provide a letter of credit in the amount of $7.0 million as security for the deferred consideration related to the acquisition (the "Avecia Acquisition") by PharmAthene, Inc. and its affiliates of substantially all of the assets and liabilities related to the vaccines business of Avecia Biologics Limited and certain of its affiliates (collectively, "Avecia"). This letter of credit will be payable upon the earlier to occur of the completion of a financing transaction in the amount of $15.0 million or more or eighteen months following the closing of the acquisition. As of March 31, 2009, the letter of credit is shown on the balance sheet as short-term restricted cash and is included in accrued expenses and other current liabilities as it is due to Avecia no later than October 2, 2009.

Short-Term Investments

Short-term investments consist of investment grade government agency and corporate debt securities due within one year. All investments are classified as available-for-sale and are recorded at market value. Unrealized gains and losses are reflected in other comprehensive income (loss). The estimated fair value of the available-for-sale securities is determined based on quoted market prices or rates for similar instruments. Management reviews the Company's investment portfolio on a regular basis and seeks guidance from its professional portfolio manager related to U.S. and global market conditions. We assess the risk of impairment related to securities held in our investment portfolio on a regular basis and noted no impairment during the quarter ended March 31, 2009. Additionally, the Company's Audit Committee reviews the investment portfolio and strategy on an annual basis.

Significant Customers and Accounts Receivable

The Company's primary customers are the U.S. Department of Defense (the "DoD"), the National Institute of Allergy and Infectious Diseases ("NIAID"), the Biomedical Advanced Research and Development Authority ("BARDA"), and the National Institute of Health ("NIH"). For the three months ended March 31, 2009 and 2008, contract revenues from the DoD and NIAID related to Protexia® and Valortim® comprised 63% and 100%, of total revenues, respectively. Contract revenues related to SparVax™ and RypVax™, which we acquired during fiscal year 2008, represented 37% of total revenues for the three months ended March 31, 2009. As of March 31, 2009 and December 31, 2008, the Company's receivable balances were comprised 100% of receivables from these customers. Unbilled accounts receivable, included in accounts receivable, totaling $7.7 million and $5.0 million as of March 31, 2009 and December 31, 2008, respectively, related to the contracts with these customers. Accounts receivable are stated at invoice amounts and consist primarily of amounts due from the DoD, NIAID and NIH as well as amounts due under reimbursement contracts with other government entities.

While the Company has a policy to provide an allowance for any amount of accounts receivable which it determines to be uncollectible and the Company will write off any uncollectible account when the likelihood of that account's collection is determined to be not probable, the Company has not historically found it necessary to record any write-offs of accounts receivable or to record an allowance for uncollectible accounts.

Table of Contents

Concentration of Credit Risk

Financial instruments that potentially subject the Company to concentrations of credit risk are primarily cash and cash equivalents, investments and accounts receivable. The Company maintains its cash and cash equivalents and investment balances in the form of money market accounts, debt and equity securities and overnight deposits with financial institutions that management believes are creditworthy. The Company's accounts receivables are from the U.S., Canadian or United Kingdom governments.

Intangible Assets

Patents are carried at cost less accumulated amortization which is calculated on a straight line basis over the estimated useful lives of the patents. The Company periodically reviews the carrying value of patents to determine whether the carrying amount of the patents is recoverable. For the three months ended March 31, 2009 and 2008, there were no adjustments to the carrying values of the patents. The Company is amortizing the cost of the patents over an 11 year period. For the three months ended March 31, 2009 and 2008, the Company has recorded amortization expense of $31,044 and $40,846, respectively.

Goodwill represents the excess of purchase price over the fair value of net identifiable assets associated with the Avecia Acquisition. The Company reviews the carrying value of goodwill for impairment annually during the fourth quarter or more frequently if impairment indicators exist. Evaluating goodwill for impairment requires management judgment, including the estimation of future cash flows, future growth rates and profitability and the expected life over which cash flows will occur. Changes in the Company's business strategy or adverse changes in market conditions could impact impairment analyses and require the recognition of an impairment charge equal to the excess of the carrying value of goodwill over its estimated fair value. For the period ended March 31, 2009, the Company determined that there was no impairment of goodwill.

Accrued Expenses

Management is required to estimate accrued expenses as part of the process of preparing financial statements. The estimation of accrued expenses involves identifying services that have been performed on the Company's behalf, and estimating the level of services performed and the associated costs incurred for such services as of each balance sheet date in the financial statements. Accrued expenses include professional service fees, such as fees paid to lawyers and accountants, contract service fees, such as those under contracts with clinical research organizations and investigators in conjunction with clinical trials, and fees to contract manufacturers in conjunction with the production of clinical materials. Pursuant to management's assessment of the services that have been performed on clinical trials and other contracts, the Company recognizes these expenses as the services are provided. Management assessments include, but are not limited to: (1) an evaluation by the project manager of the work that has been completed during the period, (2) measurement of progress prepared internally and/or provided by the third-party service provider, (3) analyses of data that justify the progress, and (4) management's judgment.

Revenue Recognition

The Company generates its revenue from two different types of contractual arrangements: cost-plus-fee contracts and cost reimbursable grants. Revenues on cost-plus-fee contracts are recognized to the extent of costs incurred plus an estimate of the applicable fees earned. 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. The Company analyzes each cost reimbursable grant to ensure reporting of revenues gross versus net is appropriate based on the guidance in the AICPA Federal Government Contractors Guide or the Financial Accounting Standards Board's Emerging Issues Task Force Issue 99-19, *Gross Versus Net*, whichever is most appropriate. For the three months ended March 31, 2009 and 2008, the Company recorded approximately $0.3 million and $0.3 million, respectively, of costs reimbursed by the government as a reduction to research and development expense as they are viewed as reduction of research and development costs under the guidance.

The Company's contracts may include the provisions of more than one of its services. Collaborative research and development agreements can provide for one or more of up-front license fees, research payments, and milestone payments. In these situations, the Company recognizes revenue in accordance with the Financial

Table of Contents

Accounting Standards Board's Emerging Issues Task Force Issue 00-21, *Revenue Arrangements with Multiple Deliverables*. Accordingly, for applicable arrangements, revenue recognition includes the proper identification of separate units of accounting and the allocation of revenue across all elements based on relative fair values, with proper consideration given to the guidance provided by other authoritative literature.

Revenues from the achievement of research and development milestones, if deemed substantive, are recognized as revenue when the milestones are achieved and the milestone payments are due and collectible. If not deemed substantive, the Company recognizes such milestone as revenue on a straight-line basis over the remaining expected term of continued involvement in the research and development process. Milestones are considered substantive if all of the following conditions are met: (1) the milestone is non-refundable; (2) achievement of the milestone was not reasonably assured at the inception of the arrangement; (3) substantive effort is involved to achieve the milestone; and (4) the amount of the milestone appears reasonable in relation to the effort expended, the other milestones in the arrangement and the related risk associated with the achievement of the milestone and any ongoing research and development or other services are priced at fair value. Payments received in advance of work performed are recorded as deferred revenue.

Research and Development

Research and development costs include salaries, facilities expense, overhead expenses, material and supplies, pre-clinical expense, clinical trials and related clinical manufacturing expenses, stock-based compensation expense, contract services and other outside services. As of March 31, 2009, the Company has recorded $0.2 million in prepaid development costs relating to non-refundable advance payments. All other costs are charged to expense, as incurred.

Share-Based Compensation

The Company accounts for its stock-based compensation plans using the fair value recognition provisions of Statement of Financial Accounting Standards No. 123 (R), *Share-Based Payment* ("SFAS No. 123R") which establishes accounting for share-based awards exchanged for employee services and requires companies to expense the estimated fair value of these awards over the requisite employee service period. Under SFAS No. 123R, share-based compensation cost is determined at the grant date using an option pricing model. The value of the award that is ultimately expected to vest is recognized as expense on a straight line basis over the employee's requisite service period.

The Company has estimated the fair value of each award using the Black-Scholes option pricing model, which was developed for use in estimating the value of traded options that have no vesting restrictions and that are freely transferable. The Black-Scholes model considers, among other factors, the expected life of the award and the expected volatility of the Company's stock price.

Employee share-based compensation expense recognized for the three months ended March 31, 2009 and 2008 was calculated based on awards ultimately expected to vest and has been reduced for estimated forfeitures at a rate of approximately 17% and 18%, respectively, for stock options, and 7% and 7%, respectively, for restricted shares, based on the Company's historical option forfeitures. SFAS No. 123R requires forfeitures to be estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates.

Share-based compensation expense recognized under SFAS No. 123R for the three months ended March 31, 2009 and 2008, respectively, was:

	Three months ended March 31,	
	2009	2008
	(unaudited)	
Research and development	$ 259,320	$ 98,179
General and administrative	692,240	450,868
Total share-based compensation expense	$ 951,560	$ 549,047

Table of Contents

Basic and Diluted Net Loss Per Share

The Company applies Statement of Financial Accounting Standards No. 128, *Earnings per Share*, which establishes standards for computing and presenting earnings per share. Basic net loss per share of common stock excludes dilution for potential common stock issuances and is computed by dividing net loss by the weighted-average number of shares outstanding for the period. Diluted net loss per share reflects the potential dilution that could occur if securities were exercised into common stock. However, for all periods presented, diluted net loss per share is the same as basic net loss attributable to common shareholders per share as the inclusion of weighted average shares of common stock issuable upon the exercise of stock options and warrants would be anti-dilutive. Securities outstanding in the amount of 20,096,000 and 14,673,000 shares for the three months ended March 31, 2009 and 2008, respectively, were excluded from the calculation of diluted net loss per share since their inclusion would be anti-dilutive.

Income Taxes

As of March 31, 2009, the Company had recognized a valuation allowance to the full extent of its deferred tax assets since the likelihood of realization of the benefit does not meet the more likely than not threshold. The Company believes that any of its uncertain tax positions would not result in adjustments to its effective income tax rate because likely corresponding adjustments to deferred tax assets would be offset by adjustments to recorded valuation allowances. We file a U.S. federal income tax return as well as returns for various state and foreign jurisdictions. The Company's income taxes have not been subject to examination by any tax jurisdiction since its inception. Accordingly, all income tax returns filed by the Company are subject to examination by taxing jurisdictions.

Fair Value of Financial Instruments

The Company's financial instruments include primarily cash and cash equivalents, accounts receivable, short-term investments and other current assets, accounts payable, accrued and other liabilities, notes payable and long-term debt. Due to the short-term nature of the cash and cash equivalents, accounts receivable, short-term investments and other current assets, accounts payable and accrued and other liabilities, the carrying amounts of these assets and liabilities approximate their fair value. The fair value of the Company's notes payable and long term debt approximates fair value, based on current incremental borrowing rates of the Company.

Reclassifications

Certain prior period amounts in the consolidated financial statements have been reclassified to conform to the current period presentation.

Recent Accounting Pronouncements

In December 2007, the Financial Accounting Standards Board ("FASB") issued Statement of Financial Accounting Standards No. 141 (revised 2007), *Business Combinations* ("SFAS 141R"). SFAS 141R establishes principles and requirements for how an acquirer recognizes and measures in its financial statements the identifiable assets acquired, the liabilities assumed, any noncontrolling interest in the acquiree and the goodwill acquired. SFAS 141R also establishes disclosure requirements to enable the evaluation of the nature and financial effects of a business combination. SFAS 141R is effective for financial statements issued for fiscal years beginning after December 15, 2008 as early adoption is not allowed. The Company adopted SFAS 141R, effective January 1, 2009 for business combinations.

In June 2008, the FASB issued EITF 07-5, "*Determining Whether an Instrument (or Embedded Feature) Is Indexed to an Entity's Own Stock*" ("EITF 07-5"). EITF 07-5 provides guidance in assessing whether an equity-linked financial instrument (or embedded feature) is indexed to an entity's own stock for purposes of determining whether the appropriate accounting treatment falls under the scope of SFAS 133, "Accounting For Derivative Instruments and Hedging Activities" and/or EITF 00-19, "*Accounting For Derivative Financial Instruments Indexed to, and Potentially Settled in, a Company's Own Stock*". EITF 07-5 is effective for financial statements issued for fiscal years beginning after December 15, 2008 and early application is not permitted. The Company adopted EITF 07-5 effective January 1, 2009. See *Note 9 - Warrants to Purchase Common Stock* for the impact on the results of operations and financial position.

Table of Contents

Note 3 — Fair Value Measurements

Effective January 1, 2008, the Company adopted Statement of Financial Accounting Standards No. 157, *Fair Value Measurements*, ("SFAS No. 157") which defines fair value as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants at the measurement date. SFAS No. 157 establishes a three-level fair value hierarchy that prioritizes the inputs used to measure fair value. This hierarchy requires entities to maximize the use of observable inputs and minimize the use of unobservable inputs. The three levels of inputs used to measure fair value are as follows:

- Level 1 — Quoted prices in active markets for identical assets or liabilities.
- Level 2 — Observable inputs other than quoted prices included in Level 1, such as quoted prices for similar assets and liabilities in active markets; quoted prices for identical or similar assets and liabilities in markets that are not active; or other inputs that are observable or can be corroborated by observable market data.
- Level 3 — Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities. This includes certain pricing models, discounted cash flow methodologies and similar techniques that use significant unobservable inputs.

The Company has segregated all financial assets and liabilities that are measured at fair value on a recurring basis (at least annually) into the most appropriate level within the fair value hierarchy based on the inputs used to determine the fair value at the measurement date in the table below. FSP FAS 157-2 delayed the effective date for all nonfinancial assets and liabilities until January 1, 2009, except those that are recognized or disclosed at fair value in the financial statements on a recurring basis.

As of March 31, 2009, financial assets and liabilities subject to fair value measurements were as follows:

	Three months ended March 31, 2009			
	Level 1	Level 2	Level 3	Balance
Assets				
Available-for-sale securities	$ 6,773,594	$ —	$ —	$ 6,773,594
Liabilities				
Derivative	$ —	$ 9,491	$ —	$ 9,491
Warrant liability	$ —	$ —	$ 1,535,784	$ 1,535,784

The following table sets forth a summary of changes in the fair value of the Company's Level 3 liabilities for the three months ended March 31, 2009:

Description	Balance at December 31, 2008	Cumulative Effect of the Adoption of EITF 07-05 (See Note 4)	Realized Gains (Losses)	Balance as of March 31, 2009
Derivative liabilities related to Warrants	$ —	1,412,110	123,674	1,535,784

The unrealized losses on the derivative liabilities are classified in other expenses as a change in derivative liabilities in the Company's statement of operations. Fair value is determined based on a probability-weighted Black-Scholes option pricing model calculation. (See Note 9.)

Table of Contents

A financial instrument's level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. At each reporting period, the Company performs a detailed analysis of the assets and liabilities that are subject to SFAS 157. At each reporting period, all assets and liabilities for which the fair value measurement is based on significant unobservable inputs or instruments which trade infrequently and therefore have little or no price transparency are classified as Level 3.

Note 4 - Short-Term Investments — Available for Sale

The amortized cost, gross unrealized gains, gross unrealized losses and fair value of available-for-sale investments by security classification, all of which are short term, at March 31, 2009 were as follows:

March 31, 2009	Amortized Cost	Gross Unrealized Gain	Gross Unrealized Loss	Estimated Fair Value
Corporate debt securities	$ 3,601,248	$ 14,658	$ —	$ 3,615,906
Government debt securities	3,125,179	32,509	—	3,157,688
Total Securities	$ 6,726,427	$ 47,167	$ —	$ 6,773,594

During the three months ended March 31, 2009, the Company recognized realized losses of approximately $13,000 on sales of available-for-sale securities. The gains and losses on available-for-sale securities are based on the specific identification method.

Note 5 — Property and Equipment

Property and equipment consisted of the following:

	March 31, 2009 (unaudited)
Land	$ 440,385
Building and leasehold improvements	4,787,952
Furniture, farm and office equipment	239,157
Laboratory equipment	595,957
Computer equipment	933,656
	6,997,107
Less accumulated depreciation	(1,785,893)
Property and equipment, net	$ 5,211,214

Depreciation expense for the three months ended March 31, 2009 and 2008 was $161,317 and $155,257, respectively.

Note 6 — Accrued Expenses and Other Liabilities

Accrued expenses and other liabilities consisted of the following:

	March 31, 2009 (unaudited)
Accrued research and development expenses	$ 1,750,069
Accrued professional services	2,236,293
Accrued employee expenses	731,802
Deferred consideration — Avecia Acquisition	7,000,000
Other	479,368
Accrued expenses and other liabilities	$ 12,197,532

Table of Contents

Note 7 — Long Term Debt

Convertible 8% Notes

The Convertible Notes accrue interest at an interest rate of 8% per annum, except in the event of a default in which instance the interest rate will increase to 12%. The principal amount of the Notes and any accrued interest are convertible into shares of PharmAthene common stock at the option of the holder at any time based upon a conversion rate of $10.00 per share. The Notes have a maturity date of August 3, 2009. The Company recognized interest expense of approximately $451,300 and $398,800 on the Notes for the three months ended March 31, 2009 and 2008, respectively.

$10 Million Debt Financing

On March 30, 2007, the Company entered into a $10 million credit facility with Silicon Valley Bank and Oxford Finance Corporation (together, the "Lenders"). Under the credit facility the Company borrowed $10 million, which bears interest at a rate of 11.5%. Pursuant to the terms of the loan and security agreement evidencing the credit facility, the Company made monthly payments of interest only through September 30, 2007 and, thereafter, makes monthly payments of principal and interest over the remaining 30 months of the loan. The loan is secured by a security interest on all of the Company's assets other than certain intellectual property. The Company may prepay the debt provided it pays certain prepayment fees. In connection with the credit facility, the Company issued to Silicon Valley Bank and Oxford Financial Corporation warrants, which expire on March 30, 2017 to purchase an aggregate of 100,778 shares of common stock with an exercise price of $3.97 per share.

PharmAthene entered into a Consent and First Loan Modification Agreement, dated as of March 20, 2008, with the Lenders (the "Loan Modification Agreement"), which, among other things, amended the loan agreement to require PharmAthene to maintain, at all times, at a segregated account, at either Silicon Valley Bank or Silicon Valley Bank Securities, unrestricted and unencumbered cash or cash equivalents in the amount of at least one and one-quarter times the outstanding obligations of PharmAthene to the Lenders.

In March 2009, the Lenders and the Company entered into the Second Loan Modification Agreement, pursuant to which the Lenders agreed to reduce the amount of unrestricted and unencumbered cash or cash equivalents PharmAthene is required to maintain in the segregated account to one-half of its outstanding obligations to them. As discussed in Note 2, the Company has recorded $2.0 million in short-term restricted cash in connection with this provision.

The Company has recognized interest expense on this credit facility of approximately $141,700 and $259,700 for the three months ended March 31, 2009 and 2008, respectively.

Note 8 — Commitments and Contingencies

Leases

The Company leases offices in the United States under a 10 year office lease, which commenced on May 1, 2007. Additionally, with the Avecia Acquisition, the Company leases offices in the United Kingdom under a lease expiring in 2010. Remaining annual minimum payments are as follows (unaudited):

2009	$	835,500
2010		895,500
2011		725,900
2012		747,700
2013		770,200
2014 and thereafter		2,848,700
	$	6,823,500

Table of Contents

For the three months ended March 31, 2009 and 2008, total rent expense under operating lease agreements was approximately $139,500 and $183,300, respectively.

During September 2008, the Company entered into an agreement to lease additional office space at its headquarters in Annapolis, MD commencing in the second quarter of 2009.

License Agreements

In connection with the Avecia Acquisition, the Company acquired license agreements with The Defence Science and Technology Laboratory of the United Kingdom Ministry of Defence ("DSTL"), originally executed May and December 2006, for the rights to certain technologies. These agreements allow for the licensing of certain patents and technology necessary to perform development of the rPA and rYP programs as required under the Company's government contracts with the NIAID. Upon commercialization, the license agreements require PharmAthene to make royalty payments equal to a specified percentage of future sales of products for both government procurement and commercial markets. No payments on these licenses have been incurred. In February 2009, both of these licenses were amended and restated to broaden the scope of exclusivity and address other general business issues.

Note 9 — Warrants to Purchase Common Stock

In June 2008, the FASB finalized EITF 07-5, "Determining Whether an Instrument (or Embedded Feature) is indexed to an Entity's Own Stock". The EITF lays out a procedure to determine if an equity-linked financial instrument (or embedded feature) is indexed to its own common stock. The EITF is effective for fiscal years beginning after December 15, 2008. 2,745,098 of the Company's outstanding warrants that were previously classified in equity were reclassified to derivative liabilities on January 1, 2009 as a result of adoption of this EITF. The Company estimated the fair value of these liabilities as of January 1, 2009 to be $637,000 resulting in a reduction of $423,000 to additional-paid-in-capital and an increase of $213,000 to the accumulated deficit. The increase in the accumulated deficit represents the cumulative effect of the change in accounting principle, which was determined based on the amounts that would have been recognized through the statement of operations if the guidance in EITF 07-05 had been applied from the issuance date of the warrants. The fair value of these liabilities was approximately $378,000 at March 31, 2009. The $259,000 change in the fair value from the date of adoption to March 31,

2009 is reported in the consolidated statement of operations as other income. The fair value of these liabilities will be re-measured at the end of every reporting period and the change in fair value will be reported in the consolidated statement of operations as other income or (expense).

In connection with the March 27, 2009 public offering of approximately 2.1 million shares, the Company issued warrants to purchase an aggregate of 705,354 shares of its common stock at an exercise price of $3.00 per share. The warrants will be exercisable beginning on September 27, 2009 and will expire on September 27, 2014, five years from the date they become exercisable. In accordance with the provisions of EITF 00-19, *Accounting for Derivative Financial Instruments Indexed to, and Potentially Settled in, a Company's Own Stock*, these warrants are not considered indexed to the Company's stock, therefore, are required to be classified as liability and remeasured at fair value each reporting period. The fair value of these liabilities was approximately $1.2 million at March 31, 2009. The $78,000 change in the fair value from the date of issuance to March 31, 2009 is reported in the consolidated statement of operations as other income.

Note 10 — Stockholders' Equity

Common Stock

On March 27, 2009, the Company closed on the public sale of 2,116,055 newly issued shares of its common stock at $2.60 per share and warrants to purchase 705,354 shares of its common stock at an exercise price of $3.00 per share, resulting in gross proceeds of $5.5 million. The warrants will be exercisable beginning on September 27, 2009 and will expire on September 27, 2014, five years from the date they become exercisable. The Company intends to use the net proceeds for general corporate purposes, including the satisfaction of existing obligations.

Table of Contents

Former PharmAthene's 2002 Long-Term Incentive Plan

In connection with the merger between the subsidiary of Healthcare Acquisition Corp. ("HAQ") and former PharmAthene, Inc., a Delaware corporation ("Former PharmAthene"), on August 3, 2007 (the "Merger"), the Company assumed awards that had been initially granted by Former PharmAthene under Former PharmAthene's 2002 Long-Term Incentive Plan (the "2002 Plan") which provided for the grant of incentive stock options, restricted common stock and stock appreciation rights. Under the 2002 Plan, option awards were granted to eligible employees, officers, directors and consultants. The fair value of each option grant was estimated on the date of grant using the Black-Scholes option-pricing model based on selected inputs. The board of directors of Former PharmAthene established the vesting schedule for the awards. Grants made to new employees upon commencement of employment typically provided for annual vesting of 25% of shares on the first anniversary date of hire. For annual grants to existing employees, grants typically provided for monthly vesting over four years. These options had a maximum term of no more than 10 years. The 2002 Plan was not assumed by the Company in connection with the Merger, and all of options originally granted under the 2002 Plan were assumed, on an as-converted basis, under the Company's 2007 Long Term Incentive Plan upon the closing of the Merger. No further grants are being made under the 2002 Plan.

The following table summarizes the activity regarding options originally issued under the 2002 Plan (the "2002 Plan Options") and subsequently assumed under the 2007 Long Term Incentive Plan::

	Shares	Weighted-Average Exercise Price	Weighted-Average Contractual Term
Outstanding, January 1, 2009	399,682	$ 3.57	6.4 years
Granted	—		
Exercised	—		
Forfeited	(322)	3.82	
Outstanding, March 31, 2009	399,360	$ 3.57	6.2 years
Exercisable, March 31, 2009	341,004	$ 3.53	5.9 years
Vested and expected to vest, March 31, 2009	390,294		

2007 Long-Term Incentive Plan

On August 3, 2007, our stockholders approved the 2007 Long Term Incentive Plan (the "2007 Plan") which provides for the granting of incentive and non-qualified stock options, stock appreciation rights, performance units, restricted common awards and performance bonuses (collectively "awards") to our officers and employees. Additionally, the 2007 Plan authorizes the granting of non-qualified stock options and restricted stock awards to our directors and to any independent consultants.

At that time, the Company reserved 3,500,000 shares of common stock in connection with awards to be granted under the 2007 Plan, including those awards that had originally been made under the 2002 Plan. At the 2008 annual meeting held on June 13, 2008, the Company's shareholders approved proposed amendments to the 2007 Plan, increasing from 3,500,000 shares to 4,600,000 shares the maximum number of shares authorized for issuance under the plan and adding an evergreen provision pursuant to which the number of shares authorized for issuance under the plan will increase automatically in each year, beginning in 2009 and continuing through 2015, according to certain limits set forth in the 2007 Plan. The Board of Directors in conjunction with management determines who receives awards, the vesting conditions, which are generally four years, and the exercise price. Options may have a maximum term of ten years.

Table of Contents

The following table summarizes the activity of the 2007 Plan as related to option awards (exclusive of the 2002 Plan Options):

	Shares	Weighted-Average Exercise Price	Weighted-Average Contractual Term
Outstanding, January 1, 2009	3,562,941	$ 4.30	9.0 years
Granted	985,350	2.43	9.9 years
Exercised	—	—	
Forfeited	(2,640)	4.02	
Outstanding, March 31, 2009	4,545,651	3.90	9.0 years
Exercisable, March 31, 2009	1,181,237	$ 4.97	8.6 years
Vested and expected to vest, March 31, 2009	3,989,257		

The following table summarizes the activity of the 2007 Plan as related to restricted stock awards:

	Shares	Weighted-Average Exercise Price	Weighted-Average Contractual Term
Outstanding, January 1, 2009	163,121	$ 5.05	8.7 years
Granted	258,633	2.46	9.8 years
Exercised	(5,833)	3.18	
Forfeited	(282)	2.46	
Outstanding, March 31, 2009	415,639	$ 3.47	9.3 years
Vested and expected to vest, March 31, 2009	352,728	3.47	

Valuation Assumptions Used to Determine Fair Value of Share-Based Compensation

The fair value for the 2009 and 2008 awards were estimated at the date of grant using the Black-Scholes option-pricing model using the following assumptions:

	March 31,	
	2009	2008
Weighted average volatility	87%	66%
Risk-free interest rate	1.8-2.3%	3.0-3.5%
Expected annual dividend yield	—	—
Expected weighted average life, in years	6.2	7.0

The valuation assumptions were determined as follows:

- Weighted average volatility: We determine the expected volatility by using an average historical volatility from comparable public companies with an expected term consistent with ours.
- Risk-free interest rate: The yield on zero-coupon US Treasury securities for a period that is commensurate with the expected term of the award.
- Expected annual dividend yield: The estimate for annual dividends is zero because we have not historically paid a dividend and do not intend to do so in the foreseeable future.
- Expected life: The expected term of the awards represents the period of time that the awards are expected to be outstanding. We use historical data and expectations for the future to estimate

Table of Contents

employee exercise and post-vest termination behavior and do not stratify employees into multiple groups.

Unit Purchase Option

In connection with the initial public offering, the underwriters paid $100 for an option to purchase up to a total of 225,000 units. The units issuable upon exercise of this option are identical to those offered in the initial public offering (i.e. each unit consists of one share of common stock and one warrant) except that the associated warrants have a different exercise price as further discussed in the “Warrants” section below. This option became exercisable at $10.00 per unit on August 3, 2007, and expires on July 28, 2010. The exercise price and number of units issuable upon the exercise of the option may be adjusted in certain circumstances including in the event of a stock dividend, or recapitalization, reorganization, merger or consolidation.

Under an amendment to the unit purchase option agreement, the Company is not obligated to pay cash or other consideration to the holders of the unit purchase option or “net-cash settle” the obligation of HAQ under the unit purchase option.

Warrants

In connection with HAQ’s initial public offering in 2005, HAQ sold warrants to acquire approximately 9.4 million shares of common stock at an exercise price of $6.00 per share. Each warrant entitles the holder to purchase from the Company one share of common stock and expires four years from the effective date of the offering on July 28, 2009. Furthermore, in connection with the initial public offering, HAQ issued to the representative of the underwriters an option to purchase up to a total of 225,000 units (as discussed above). Underlying the units are 225,000 shares of common stock and warrants to acquire 225,000 shares of common stock at an exercise price of $7.50 per share.

Pursuant to the credit facility further discussed in Note 7, the Company issued 100,778 common stock warrants with an exercise price of $3.97 per share.

In connection with the stock purchase by Kelisia Holdings Ltd. in 2008, the Company issued a warrant to purchase up to 2,745,098 additional shares of PharmAthene common stock at an exercise price of $5.10 per share.

In connection with the March 27, 2009 public offering of approximately 2.1 million shares, the Company issued warrants to purchase an aggregate of 705,354 shares of its common stock at an exercise price of $3.00 per share. The warrants will be exercisable beginning on September 27, 2009 and will expire on September 27, 2014, five years from the date they become exercisable. Warrant activity from January 1, 2009 to March 31, 2009 was as follows:

	Warrants for Shares of Common Stock	Weighted-Average Exercise Price
Outstanding at January 1, 2009	12,458,056	$ 5.81
Granted	705,354	3.00
Forfeited	—	—
Outstanding at March 31, 2009	13,190,410	$ 5.66

Note 11 — Subsequent Events

Transfer of NIAID Contract for Development of SparVax™ to BARDA

On April 1, 2009, the Biomedical Advanced Research and Development Authority ("BARDA") initiated the transfer of our existing contract with the National Institute of Allergy and Infectious Diseases (NIAID) for the development of SparVax™, which was initially awarded in 2003. BARDA and PharmAthene are currently modifying the existing statement of work to include, among other things, the completion of on-going stability

Table of Contents

studies and development of potency assays along with certain manufacturing scale-up and technology transfer activities to a U.S.-based manufacturer for the bulk drug substance for SparVax™.

As a result of the transfer of the contract and modification of the statement of work, the Company has been transitioning development and manufacturing activities as well as other general and administrative functions from the UK to the United States. In connection with this transition, the Company terminated certain UK-based personnel and is in the process of relocating other personnel to the United States. The Company estimates that the total costs associated with these actions, including legal expenses, will be approximately $0.6 million.

Table of Contents

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

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

We have based the forward-looking statements included in this Quarterly Report on Form 10-Q on information available to us on the date of this Quarterly Report, 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.

Unless specifically noted otherwise, as used throughout this Quarterly Report on Form 10-Q, "the Company", "PharmAthene", "we", "us" or "our" refers to the business of the combined company after the merger with Former PharmAthene (the "Merger") 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 following discussion should be read in conjunction with the consolidated financial statements for the Company which present PharmAthene's results of operations for the three month periods ended March 31, 2009 and 2008 as well as its financial positions at March 31, 2009 and December 31, 2008, contained elsewhere in this Quarterly Report on Form 10-Q. The following discussion should also be read in conjunction with the Annual Report on Form 10-K for the year ended December 31, 2008 filed on March 31, 2009 and as amended on April 30, 2009, including the consolidated financial statements contained therein.

Overview

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

Table of Contents

- 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.

Recent Events

Broad Agency Announcement for the Advanced Research and Development of Chemical, Biological, Radiological, and Nuclear Medical Countermeasures

In March 2009, BARDA issued a Broad Agency Announcement (BAA) for the Advanced Research and Development of Chemical, Biological, Radiological, and Nuclear Medical Countermeasures, which included an advanced development solicitation for proposals covering anthrax anti-toxins. The BAA states that research and technical objectives proposed by offerors may include non-clinical research and development, process development, formulation, manufacturing development, and clinical evaluation efforts. In response we submitted an initial proposal providing for further development of Valortim®. In April 2009, we were notified that we had received a favorable evaluation from BARDA, and are now in the process of preparing a full proposal for submission. The government has stated that it intends to make final award decisions with respect to proposals for anthrax anti-toxins by September 30, 2009.

March 2009 Public Offering

On March 27, 2009, we closed on the public sale of 2,116,055 newly issued shares of our common stock at $2.60 per share and warrants to purchase 705,354 shares of our common stock at an exercise price of $3.00 per share, resulting in gross proceeds of $5.5 million. The warrants will be exercisable beginning on September 27, 2009 and will expire on September 27, 2014, five years from the date they become exercisable. We intend to use the net proceeds for general corporate purposes, including the satisfaction of existing obligations.

Reduction in Cash Collateral Obligations under Company's Credit Facility

In March 2009, the lenders under the Company's credit facility agreed, effective January 1, 2009, to reduce the amount of unrestricted and unencumbered cash or cash equivalents that we are required to maintain in the segregated account to one-half of our outstanding obligations to them.

Transfer of NIAID Contract for Development of SparVax™ to BARDA

On April 1, 2009, the Biomedical Advanced Research and Development Authority ("BARDA") initiated the transfer of our existing contract with the National Institute of Allergy and Infectious Diseases ("NIAID") for the development of SparVax™, which was initially awarded in 2003. BARDA and PharmAthene are currently modifying the existing statement of work to, among other things, include the completion of on-going stability studies and development of potency assays along with certain manufacturing scale-up and technology transfer activities to a U.S.-based manufacturer for the bulk drug substance for SparVax™.

Table of Contents

Critical Accounting Policies

Estimates

The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. We base our estimates and assumptions on historical experience and various other factors that are believed to be reasonable under the circumstances. Actual results could differ from our estimates and assumptions. We believe the following critical accounting policies, among others, affect our more significant estimates and assumptions and require the use of complex judgment in their application.

FASB 123R Regarding Share-Based Payments

The FASB issued FAS 123R, which requires that all share-based payments to employees, including grants of employee stock options, be recognized in the income statement based on their grant date fair values. Costs of all share-based payments are recognized over the requisite service period that an employee must provide to earn the award (i.e. usually the vesting period) and charged to the operating expense associated with that employee.

Revenue Recognition

We generate our revenue from two different types of contractual arrangements: cost-plus-fee contracts and cost reimbursable grants. Revenues on cost-plus-fee contracts are recognized to the extent of costs incurred plus an estimate of the applicable fees earned. We consider fixed fees under cost-plus-fee contracts to be earned in proportion to the allowable costs incurred in performance of the contract. We analyze each cost reimbursable grant to ensure reporting of revenues gross versus net is appropriate based on the guidance in the AICPA Federal Government Contractors Guide or FASB's Emerging Issues Task Force (EITF) Issue 99-19, *Gross Versus Net*, whichever is most appropriate.

Our contracts may include the provisions of more than one of our services. Collaborative research and development agreements can provide for one or more of up-front license fees, research payments, and milestone payments. In these situations, we recognize revenue in accordance with the Financial Accounting Standards Board's (FASB's) Emerging Issues Task Force (EITF) Issue 00-21, *Revenue Arrangements with Multiple Deliverables*. Accordingly, for applicable arrangements, revenue recognition includes the proper identification of separate units of accounting and the allocation of revenue across all elements based on relative fair values, with proper consideration given to the guidance provided by other authoritative literature.

Revenues from the achievement of research and development milestones, if deemed substantive, are recognized as revenue when the milestones are achieved and the milestone payments are due and collectible. If not deemed substantive, we recognize such milestone as revenue on a straight-line basis over the remaining expected term of continued involvement in the research and development process. Milestones are considered substantive if all of the following conditions are met; (1) the milestone is non-refundable; (2) achievement of the milestone was not reasonably assured at the inception of the arrangement; (3) substantive effort is involved to achieve the milestone; and (4) the amount of the milestone appears reasonable in relation to the effort expended, the other milestones in the arrangement and the related risk associated with the achievement of the milestone and any ongoing research and development or other services are priced at fair value. Payments received in advance of work performed are recorded as deferred revenue.

Research and Development Expenses

Research and development costs include salaries, facilities expense, overhead expenses, material and supplies, pre-clinical expense, clinical trials and related clinical manufacturing expenses, stock based compensation expenses, contract services and other outside services. On January 1, 2008, we adopted the FASB's Emerging Issues Task Force (EITF) Issue 07-3, *Accounting for Nonrefundable Advance Payments for Goods or Services Received for Use in Future Research and Development Activities*. All other costs are charged to expense as incurred.

Table of Contents

Intangible Assets

When we acquire development products, we allocate the purchase price, including acquisition expenses and assumed liabilities, to tangible and intangible assets, including goodwill. The portion allocated to intangible assets may be allocated to trademarks, patents and other intangibles. We estimate the useful lives of the assets by considering the remaining life of the patents, estimated future introductions of competing products, and other related factors.

Because of the nature of pharmaceutical research, and particularly because of the difficulties associated with efficacy studies in humans related to the bioterrorist products with which we work and the government's related funding provisions, factors that affect the estimate of the life of the asset are often more uncertain than other non-bioterrorist pharmaceutical research. On an annual basis, we assess recoverability of intangibles from future operations, using undiscounted future cash flows derived from the intangible assets.

Any impairment would be recognized in operating results to the extent the carrying value exceeds the fair value, which is determined based on the net present value of estimated future cash flows; in certain situations, where the carrying value is dependent upon the outcome of a single study and that study is unsuccessful, that impairment may be significant in amount and immediate in timing.

Results of Operations

Revenue

We recognized revenues of $5.5 million and $5.8 million during the three months ended March 31, 2009 and 2008, respectively. These revenues consisted primarily of contract funding from the U.S. government for the development of Protexia®, SparVax™ and RypVax™. Of the $5.5 million in revenues recognized during the first quarter of 2009, approximately $2.3 million were recognized in connection with products acquired as part of the Avecia Acquisition. In particular, during the three months ended March 31, 2009 and 2008, we recognized revenues related to U.S. government awarded contracts and grants as follows:

- Under the September 2006 contract for the advanced development of Protexia®, we recognized $2.4 million and $5.6 million of revenue for the three months ended March 31, 2009 and 2008, respectively. The $3.2 million decline in revenue is primarily attributable to the shift of our Protexia® program from the development stage to the Phase I clinical trial.

- Under the September 2007 contract for the advanced development of Valortim®, we recognized $0.6 million and $0.2 million of revenue for the three months ended March 31, 2009 and 2008, respectively.

- Under our contract for the development of SparVax™, acquired as part of the Avecia Acquisition in the second quarter of 2008, we recognized approximately $2.0 million of revenue for the three months ended March 31, 2009.

- Under our contract for the advanced development of a plague vaccine, RypVax™, acquired as part of the Avecia Acquisition in the second quarter of 2008, we recognized approximately $0.3 million of revenue for the three months ended March 31, 2009.

- Under our September 2008 contract award for the additional development work on our third generation rPA anthrax vaccine, we recognized approximately $0.3 million of revenue for the three months ended March 31, 2009.

Research and Development Expenses

Our research and development expenses were $5.7 million and $5.9 million for the quarters ended March 31, 2009 and 2008, respectively. These expenses resulted from research and development activities related to programs for Valortim® and Protexia®, as well as from activities related to the SparVax™, RypVax™ and third

Table of Contents

generation anthrax vaccine programs which we acquired in the second quarter of 2008. These research and development expenses are primarily funded through U.S. government contracts and grant awards. We incurred both direct expenses, which included salaries and other costs of personnel, raw materials and supplies, and indirect expenses. We also incurred third-party costs, such as contract research, consulting and clinical development costs for individual projects.

Research and development expenses for the quarters ended March 31, 2009 and 2008 were attributable to research programs as follows:

	Three months ended March 31,	
(amounts in millions)	**2009**	**2008**
Anthrax therapeutic and vaccines	$ 2.7	$ 2.0
Chemical nerve agent protectants	2.5	3.6
Recombinant dual antigen plague vaccine	0.3	—
Internal research and development	0.2	0.3
Total research and development expenses	$ 5.7	$ 5.9

For the quarter ended March 31, 2009 as compared to the same period in 2008, research and development expenses decreased $0.2 million primarily attributable to a $1.1 million reduction in development expenses in connection with the chemical nerve agent protectants program, partially offset by increased development associated with the programs acquired as part of the Avecia Acquisition in the second quarter of 2008. The decrease in development expenses related to the clinical nerve agent protectants program resulted from reduced process development and manufacturing activities, as the program moved from the development stage to the Phase I clinical trial. Expenses in connection with the anthrax therapeutic and vaccines program increased $0.7 million primarily as a result of increased internal resources of $0.8 million and process development activity of $0.4 million, partially offset by reduced preclinical and clinical activities of $0.4 million. Expenses related to the recombinant dual antigen plague vaccine consist of development activities and internal resource costs.

The research and development expense amounts listed above for the three months ended March 31, 2009 and 2008 are net of the following cost reimbursements under our government grants (See Note 2 to our Financial Statements - Summary of Significant Accounting Policies — Revenue Recognition):

- In October 2006, the National Institutes of Health (NIH) Countermeasures Against Chemical Threats (Counter ACT) Research Network awarded us a $1.7 million grant to support continued development of Protexia®. We recognize cost reimbursements under this grant as a reduction to research expenses. We did not recognize any such reductions under this grant during either the first quarter of 2009 or 2008.

- We were awarded approximately $2.7 million in congressional appropriations from the United Stated Army Medical Research and Material Command (USAMRMC) for the development to advance Valortim®. We recognized cost reimbursements of approximately $0.1 million and $0.3 million under this funding as a reduction to offset research expenses for the three months ended March 31, 2009 and 2008, respectively.

- We recognized cost reimbursements of approximately $0.2 million under the NIH grant funding for development of our third generation anthrax vaccine candidate, which we acquired from Avecia Vaccines in the second quarter of 2008, as a reduction to offset research expenses for the quarter ended March 31, 2009.

Internal research and development costs include activities related to the development of future programs, support costs for internal resources and non-cash stock compensation expenses of $0.2 million and $0.1 million for the quarter ended March 31, 2009 and 2008, respectively.

Table of Contents

General and Administrative Expenses

General and administrative functions include executive management, finance and administration, government affairs and regulations, corporate development, human resources, legal, and compliance. For each function, we may incur direct expenses such as salaries, supplies and third-party consulting and other external costs and non-cash expenditures such as expense related to stock option and restricted share awards. Indirect costs such as facilities, utilities and other administrative overhead are also included in general and administrative expenses.

Expenses associated with general and administrative functions were $5.1 million and $4.4 million for the three months ended March 31, 2009 and 2008, respectively. These amounts include non-cash stock compensation expense of $0.7 million and $0.5 million for the quarters ended March 31, 2009 and

2008, respectively.

General and administrative expenses increased $0.7 million for the quarter ended March 31, 2009 as compared to the same period in 2008 primarily due to increased consulting and legal services associated with compliance and operating as a publicly traded entity, costs related to preparing and submitting various bids and proposals and litigation efforts of $0.8 million, and increased employee costs of $0.5 million resulting primarily from the additional headcount acquired through the Avecia Acquisition. These increases were partially offset by reduced travel and other administrative overhead costs.

Depreciation and Intangible Amortization

Depreciation and intangible amortization expense was $0.2 million and $0.2 million for the three months ended March 31, 2009 and 2008, respectively. For the three months ended March 31, 2009 and 2008, depreciation expense was $0.2 million and $0.2 million respectively. Depreciation expenses relate primarily to farm building improvements, leasehold improvements related to newly leased office space and laboratory equipment. Amortization expense recorded for the three months ended March 31, 2009 and 2008, was approximately $31,000 and $40,800, respectively, and related to patents acquired as part of the 2005 acquisition of Nexia Biotechnologies.

Other Income and Expenses

Other income and expenses primarily consists of income on our investments, interest expense on our debt and other financial obligations, changes in market value of our derivative financial instruments and foreign currency translation gains or losses. For the three months ended March 31, 2009 and 2008, we recognized interest income of $0.1 million and $0.5 million, respectively.

We incurred interest expense of $0.6 million and $0.7 million for the three months ended March 31, 2009 and 2008, respectively. Interest expense relates primarily to our outstanding 8% convertible Notes (as defined below) and our $10.0 million credit facility.

During the year ended December 31, 2006, we issued 8% convertible notes in an aggregate principal amount of $11.8 million. These notes plus accrued interest were converted into new convertible 8% notes (the “Notes”) in an aggregate principal amount of $12.3 million in conjunction with the Merger on August 3, 2007. We recognized interest expense related to the Notes of $0.5 million and $0.4 million for the three months ended March 31, 2009 and 2008, respectively. For the three months ended March 31, 2009 and 2008, the Company recorded an expense of $3,100 and income of $89,300, respectively, as a mark-to-market gain relating to the conversion feature of the Notes.

We entered into a $10.0 million credit facility on March 30, 2007 with Silicon Valley Bank and Oxford Financial Corporation. We recognized interest expense of $0.1 million and $0.3 million related to this facility for the quarter ended March 31, 2009 and 2008, respectively.

Change in Value of Warrant Liability

The change in value of warrant liability was $0.3 million for the three months ended March 31, 2009, compared to zero for the three months ended March 31, 2008. This is the result of adopting EITF 07-5 on January 1, 2009, which resulted in warrants issued in October 2008 with a value of $0.6 million on December 31, 2008 being

Table of Contents

reclassified from equity to a liability. Additionally, warrants issued on March 27, 2009 with a value of $1.2 million were recorded as a liability as of March 31, 2009. The total fair market value of the warrants as of March 31, 2009 was $1.5 million.

Liquidity and Capital Resources

Overview

Our primary cash requirements are to fund our research and development programs, general and administrative expense, and acquisition activity. Our cash requirements in future periods could change materially as a result of shifts in our business and strategy. These changes could arise from our management team’s evaluation of our business strategy, the progress of our research and development activities and clinical programs, licensing activities, acquisitions, divestitures or other corporate developments.

Since inception in March 2001, we have not generated positive cash flow. To bridge the gap between payments made to us under our government contracts and grants and our operating and capital needs, we have had to rely on a variety of financing sources, including the issuance of equity securities and convertible notes, proceeds from loans and other borrowings, and the trust funds obtained in the Merger. For the foreseeable future, we will continue to need to utilize these types of financing vehicles and potentially others to help fund our future operating and capital requirements. In particular, as a result of our continuing losses and our continuing obligations, including those under the agreements relating to the Avecia Acquisition, without additional funding through contracts and grants with the United States or foreign governments, at our current rate of cash consumption we will need to obtain additional financing no later than the first quarter 2010.

Our consolidated financial statements have been prepared on a basis which assumes that we will continue as a going concern and which contemplates the realization of assets and the satisfaction of liabilities and commitments in the normal course of business. We have incurred cumulative net losses and expect to incur additional losses in conducting further research and development activities. We do not have commercial products and, given the substantial costs relating to the development of pharmaceutical products, have comparatively limited capital resources. Our plans with regard to these matters include continued development of our products as well as seeking additional funds to support our research and development efforts. Although we continue to pursue these plans, there is no assurance that we will be successful in obtaining sufficient financing on commercially reasonable terms or at all or that we will be able to secure additional funding through government contracts and grants.

Continuation of PharmAthene as a going concern is dependent upon, among other things, the success of our research and development programs and our ability to obtain adequate financing. Our consolidated financial statements do not include any adjustments relating to recoverability of the carrying amount of recorded assets and liabilities that might result from the outcome of these uncertainties.

Sources and Uses of Cash

Cash and cash equivalents for the Company were $17.2 million and $19.8 million at March 31, 2009 and December 31, 2008, respectively. The $2.6 million decrease in cash and cash equivalents as of March 31, 2009 from December 31, 2008 primarily was attributable to the funding of operations and the repayment of debt, partially offset by the March 2009 public sale of common stock for net proceeds of approximately $5.0 million as further described below. The Company had short-term investments of $6.8 million and $3.2 million as of March 31, 2009 and December 31, 2008, respectively. The increase in short-term investments resulted primarily from net purchases of available-for-sale securities of $3.6 million, primarily funded by proceeds from our March 2009 public offering.

On March 27, 2009, we closed on the public sale of 2,116,055 newly issued shares of our common stock at $2.60 per share and warrants to purchase 705,354 shares of our common stock at an exercise price of $3.00 per share, resulting in net proceeds of approximately $5.0 million. The warrants will be exercisable beginning on September 27, 2009 and will expire on September 27, 2014, five years from the date they become exercisable. We intend to use the net proceeds for general corporate purposes, including the satisfaction of existing obligations.

Table of Contents

Operating Activities

Net cash used in operating activities was $6.8 million and $5.3 million for the three months ended March 31, 2009 and 2008, respectively. Cash used in operations during the three months ended March 31, 2009 reflects a net loss, after the effect of non-cash adjustments, of $4.3 million, an increase in accounts receivable of $1.2 million, and a decrease in accrued expenses and accounts payable of $1.2 million. Non-cash adjustments for the three months ended March 31, 2009 included non-cash stock compensation expense of $1.0 million and non-cash interest expense of $0.5 million related to the 8% convertible Notes. Accounts receivable increased due to contract award receivables due from NIAID related to the further development of SparVax™ and RypVax™ under contracts acquired in the second quarter of 2008 as part of the Avecia Acquisition, and from NIAID related to increased activities for the development of Valortim® and our third generation rPA anthrax vaccine. Accounts payable and accrued expenses decreased due to reduced development activities, primarily related to the advanced development of Protexia® and SparVax™, amounting to $2.4 million, partially offset by increased compliance-related and financing activities.

Cash used in operations during the three months ended March 31, 2008 resulted primarily from a net loss, after the effect of non-cash adjustments, of $3.8 million, increased accounts receivable of approximately $1.4 million due to contract award receivables and decreased prepaid expense of $0.2 million. These increases were partially offset by increased accounts payable and accrued expenses of approximately $0.1 million resulting from increased development activities and Merger-related costs.

Investing Activities

Net cash used in investing activities was $3.7 million for the three months ended March 31, 2009, compared to $2.1 million for the three months ended March 31, 2008. Investing activities for the first three months of 2009 related primarily to the purchases, net of sales of available for sale securities, of $3.6 million and approximately $0.2 million of capital expenditures.

Net cash used in investing activities was $2.1 million for the quarter ended March 31, 2008 resulted primarily from the pending Avecia Acquisition and restricted cash requirements with our lenders. In connection with the pending Avecia Acquisition, the Company deposited $10 million with its bank and purchased $2.5 million in available for sale securities. In order to fund the deposit, approximately $8.5 million of available for sale securities were sold at the end of the first quarter of 2008. The deposited $10 million was used to purchase a $7.0 million letter of credit as part of the purchase price of the Avecia Acquisition. Additionally, during the first quarter of 2008, the Company recorded approximately $0.9 million related to transactions costs incurred as a result of the Avecia Acquisition, which was consummated on April 2, 2008.

Financing Activities

Net cash provided by financing activities was $8.2 million for the three months ended March 31, 2009 as compared to net cash used by financing activities of $14.0 million for the three months ended March 31, 2008. In March, 2009, the Company raised net proceeds of approximately $5.0 million as a result of the public sale of shares of its common stock and warrants. Additionally, pursuant to the Second Loan Modification Agreement with its bank, the Company reduced its restricted cash obligations by $4.3 million. The Company made principal repayments of $1.0 million under its outstanding credit facility for the three months ended March 31, 2009, and has made aggregate principal repayments of $6.0 million related to this facility through March 31, 2009.

Net cash used in financing activities was $14.0 million for the three months ended March 31, 2008. This was due to the restricted cash obligations of $13.0 million resulting from the Company's funding of its restricted cash obligations pursuant to the Loan Modification Agreement and the funding to purchase a letter of credit. The Company made principal repayments of $1.0 million in the first quarter of 2009.

Future Cash Needs

Since inception in March 2001, we have not generated positive cash flow. To bridge the gap between payments made to us under our government contracts and grants and our operating and capital needs, we have had to

Table of Contents

rely on a variety of financing sources, including the issuance of equity securities and convertible notes, proceeds from loans and other borrowings, and the trust funds obtained in the Merger. For the foreseeable future, we will continue to need to utilize these types of financing vehicles and potentially others to help fund our future operating and capital requirements. In evaluating alternative sources of financing, we consider, among other things, the dilutive impact, if any, on our stockholders, the ability to leverage stockholder returns through debt financing, the particular terms and conditions of each alternative financing

arrangement and our ability to service our obligations under such financing arrangements. We received gross proceeds of approximately $5.5 million from our public offering of securities in March 2009. However, as a result of our continuing losses and our continuing obligations, including those under the agreements relating to the Avecia Acquisition, without additional funding through contracts and grants with the United States or foreign governments, at our current rate of cash consumption we will need to obtain additional financing no later than the first quarter of 2010. 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 assurance that funding will be available to us on reasonably acceptable terms, or at all. In addition, due to the United States government's substantial efforts to stabilize the economy, the U.S. government may be forced or choose to reduce or delay spending in the biodefense field, which could decrease the likelihood of future government contract awards, the likelihood that the government will exercise its right to extend any of its existing contracts with us and/or the likelihood that the government would procure products from us.

The Company's future capital requirements and liquidity will depend on many factors including, but not limited to, the progress of its research and development programs; the progress of pre-clinical and clinical testing; the time and cost involved in obtaining regulatory approval; the cost of filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights; changes in its existing research relationships, competing technological and marketing developments; its ability to establish collaborative arrangements and to enter into licensing agreements and contractual arrangements with others; and any future change in its business strategy.

Off-Balance Sheet Arrangements

We have entered into facility and equipment operating lease agreements. Our obligations under these agreements are presented in this section under "Contractual Obligations."

Contractual Obligations

The following are contractual commitments at March 31, 2009 associated with leases, research and development arrangements, collaborative development obligations and long term debt:

Contractual Obligations(1)	Total	Less than 1 Year	1-3 Years	3-5 Years	More than 5 years
Operating facility leases	$ 4,084,000	$ 884,000	$ 1,682,100	$ 1,176,600	$ 341,300
Research and development agreements	19,424,200	13,441,300	5,982,900	—	—
Notes payable, including interest	18,719,500	18,719,500	—	—	—
Total contractual obligations	$ 42,227,700	$ 33,044,800	$ 7,665,000	$ 1,176,600	$ 341,300

(1) This table does not include any royalty payments of future sales of products subject to license agreements the Company has entered into in relation to its in-licensed technology, as the timing and likelihood of such payments are not known.

Item 3. Quantitative and Qualitative Disclosures about Market Risk.

Not applicable.

Table of Contents

Item 4. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of our disclosure controls and procedures, as such term is defined in Rule 13a-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), as of the end of the period covered by this report. Based on this evaluation, our principal executive officer and our principal financial officer concluded that our disclosure controls and procedures were effective to provide reasonable assurance that information required to be disclosed by us in reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and is accumulated and communicated to our management, including our principal executive officer and principal financial officer, as appropriate to allow timely decisions regarding required disclosures.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting, identified in connection with the evaluation required by Section 13a-15(d) of the Exchange Act, that occurred during the period covered by this Quarterly Report on Form 10-Q that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Table of Contents

Inherent Limitations on Disclosure Controls and Procedures

In designing and evaluating the disclosure controls and procedures, management recognized that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. In addition, the design of disclosure controls and procedures must reflect the fact that there are resource constraints and that management is required to apply its judgment in evaluating the benefits of possible controls and procedures relative to their costs.

PART II — OTHER INFORMATION

Item 1A. Risk Factors

Investing in our securities involves risks. In addition to the other information in this quarterly report on Form 10-Q, stockholders and potential investors should carefully consider the risks described below relating to investment in our common stock. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently consider immaterial may also impair our business operations. If any of the following risks actually occur, our business, financial condition and/or results of operations could be materially adversely affected, the trading price of our common stock could decline and a stockholder could lose all or part of his or her investment.

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

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

On February 29, 2008, the DHHS issued a formal Request for Proposal (RFP-BARDA-08-15) for an "Anthrax Recombinant Protective Antigen (rPA) Vaccine for the Strategic National Stockpile," which includes a requisition for 25 million doses of an rPA anthrax vaccine. We submitted a response to this solicitation on July 31, 2008. While the original solicitation indicated that an award would be made by September 26, 2008, which was later extended to December 31, 2008, DHHS subsequently delayed the award date further because, among other things, of a protest filed by a bidder that had been eliminated from further consideration under the solicitation. The U.S. General Accounting Office (the "GAO") subsequently denied that protest. On April 15, 2009, DHHS issued an amendment to the RFP requiring that each bidder submit by April 30, 2009 a comprehensive plan to the FDA outlining the bidder's regulatory strategy for the rPA anthrax vaccine to be developed under a contract should one be awarded under the solicitation. Pursuant to an amendment dated April 22, 2009, DHHS further extended the submission deadline to June 15, 2009. DHHS has not provided guidance as to the nature of the review it expects from the FDA nor indicated how this new requirement will affect the final timing for an award decision or how feedback from the FDA in response to the submission could affect DHHS' selection of potential winning bidders under the solicitation. There can be no assurance that DHHS will not again extend the timeline for issuing an award, add other requirements, or that the Company will be awarded a contract under that solicitation.

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

Table of Contents

Risks Related to Our Financial Condition

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

We have incurred significant losses since we commenced operations. For the quarter ended March 31, 2009, we incurred an operating loss of approximately $5.5 million and had an accumulated deficit of approximately $129.8 million at March 31, 2009. Our losses to date have resulted principally from research and development costs related to the development of our product candidates, general and administrative costs related to operations, and costs related to the Avecia Acquisition.

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

- developing our existing products and developing and testing new product candidates;
- carrying out our intellectual property strategy;
- establishing our competitive position;
- pursuing third-party collaborations;
- acquiring or in-licensing products;
- receiving regulatory approvals;
- manufacturing and marketing products; and
- continuing to receive government funding and identifying new government funding opportunities.

Many of these factors will depend on circumstances beyond our control. We cannot guarantee that we will achieve sufficient revenues for profitability. Even if we do achieve profitability, we cannot guarantee that we can sustain or increase profitability on a quarterly or annual basis in the future. If revenues grow more slowly than we anticipate, or if operating expenses exceed our expectations or cannot be adjusted accordingly, then our business, results of operations, financial condition and cash flows will be materially and adversely affected. Because our strategy might include acquisitions of other businesses, acquisition expenses and any cash used to make these acquisitions will reduce our available cash. As a result of our continuing losses and our

continuing obligations, including those under the agreements relating to the Avecia Acquisition, without additional funding through contracts and grants with the United States or foreign governments, at our current rate of cash consumption we will need to identify additional financing no later than the first quarter of 2010. At March 31, 2009, our available cash, cash equivalents and short-term investments were approximately $24.0 million, we had $2.0 million of cash that was restricted under our credit facility with Silicon Valley Bank and Oxford Finance Corporation and $7 million of cash that was restricted under our agreements with Avecia. However, at March 31, 2009, we had outstanding debt to the holders of our 8% unsecured convertible notes of approximately $13.8 million, approximately $4.0 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 October 2, 2009 (which is represented by the $7 million of restricted cash referred to above). In addition, if we receive the award from DHHS for procurement of SparVax™, we would be obligated to make $10 million in milestone payments to Avecia within 90 days of the receipt of such award. Even taking into consideration our registered offering of securities in March 2009, as noted above we will likely be required to seek additional financing no later than the first quarter 2010.

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. Our requirements for additional capital may be substantial and will be dependent on

Table of Contents

many factors, including the success of our research and development efforts, our ability to commercialize and market products, our ability to successfully pursue our licensing and collaboration strategy, the receipt of continued government funding, competing technological and marketing developments, costs associated with the protection of our intellectual property and any future change in our business strategy.

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

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

Risks Related to Product Development and Commercialization

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

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

Research and development efforts in the biodefense industry are time-consuming and subject to delays. Even if we initially receive positive early-stage pre-clinical or clinical results, such results may not be indicative of results that could be anticipated in the later stages of drug development. Delays in obtaining results in our non-clinical studies and clinical testing can occur for a variety of reasons, such as slower than anticipated enrollment by volunteers in the trials, adverse events related to the products, failure to comply with Good Clinical Practices, unforeseen safety issues, unsatisfactory results in trials, perceived defects in the design of clinical trials, changes in regulatory policy as well as for reasons detailed in "*Risk Factors—Necessary Reliance on the Animal Rule in Conducting Trials is Time-Consuming and Expensive*."

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

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

Table of Contents

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

As described in "*Business—U.S. Government Regulatory Pathway—General*", to obtain FDA approval for our biological warfare defense products under current FDA regulations, we are required to utilize animal model studies for efficacy and provide animal and human safety data under the "Animal Rule." For many of the biological and chemical threats, animal models are not yet available, and as such we are developing, or will have to develop, appropriate animal models, which is a time-consuming and expensive research effort. Further, we may not be able to sufficiently demonstrate the animal correlation to the satisfaction of the FDA, as these corollaries are difficult to establish and are often unclear. The FDA may decide that our data are insufficient for approval and require additional preclinical, clinical or other studies, refuse to approve our products, or place restrictions on our ability to

commercialize those products. Further, other countries do not, at this time, have established criteria for review and approval of these types of products outside their normal review process; i.e., there is no "Animal Rule" equivalent, and consequently there can be no assurance that we will be able to make a submission for marketing approval in foreign countries based on such animal data.

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

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

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

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

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

We may fail to fully realize the potential of Valortim® and of our co-development arrangement with Medarex, our partner in the development of Valortim®, which would have an adverse effect upon our business. We have completed one Phase I clinical trial for Valortim® with our development partner, Medarex, without any reported drug-related significant adverse events. However, before we may begin selling any doses of Valortim®, we will need to conduct more comprehensive safety trials in a significantly larger group of human subjects. We will

Table of Contents

be required to expend a significant amount to finalize manufacturing capability through a contract manufacturer to provide material to conduct the pivotal safety and efficacy trials. If our contract manufacturer is unable to produce sufficient quantities at a reasonable cost, or has any other obstacles to production, such as volatile manufacturing, then we will be unable to commence these required clinical trials and studies. Even after we expend sufficient funds to complete the development of Valortim® and if and when we enter into an agreement to supply Valortim® to the U.S. government, we will be required to share any and all profits from the sale of products with our partner in accordance with a pre-determined formula.

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

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

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

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

We may also pursue strategic acquisitions to further our development and commercialization efforts. To achieve the anticipated benefits of an acquisition, we must integrate the acquired company's business, technology and employees in an efficient and effective manner. The successful combination

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

Table of Contents

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

We face an inherent risk of exposure to product liability suits in connection with our product candidates being tested in human clinical trials or sold commercially. We may become subject to a product liability suit if any product we develop causes injury, or if treated individuals subsequently become infected or suffer adverse effects from our products. Regardless of merit or eventual outcome, product liability claims may result in decreased demand for a product, injury to our reputation, withdrawal of clinical trial volunteers and loss of revenues.

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

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

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

For the foreseeable future, we believe our main customer will be national governments, primarily the U.S. government. Substantially all of our revenues to date have been derived from grants and U.S. government contracts. There can be no assurances that existing government contracts will be renewed or that we can enter into new contracts or receive new grants. The process of obtaining government contracts is lengthy and uncertain and we will have to compete with other companies for each contract. For example, while RFP-BARDA-08-15 for an rPA vaccine for the SNS initially indicated that the government would make an award by September 26, 2008 (later extended to December 31, 2008), as of the date this quarterly report on Form 10-Q is filed, the government has still not issued an award under that solicitation. There can be no assurances that we will be awarded any contracts to supply the U.S. or other governments with our products as such awards may be made, in whole or in part, to our competitors. If the U.S. government makes significant future contract awards for the supply to the U.S. emergency stockpile of a competing product, our business will be harmed and it is unlikely that we will ultimately be able to supply that particular treatment or product to foreign governments or other third parties. Further, changes in government budgets and agendas may result in a decreased and de-prioritized emphasis on procuring the biodefense products we are developing. For example, our existing contracts for the advanced development of plague vaccine, RypVax™, will end in the first half of 2011, and future government funding for this development program remains uncertain at this time. Furthermore, under the terms of our 2006 contract with the U.S. Department of Defense regarding Protexia®, the Department of Defense may elect not to continue development assistance of this nerve agent countermeasure after initial funding of $41 million has been received (which decision we anticipate may occur by the end of the fourth quarter of 2009), or, if the Department of Defense does so elect to continue funding and we meet all development milestones, it may nevertheless choose not to procure any doses of Protexia®.

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

Table of Contents

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

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

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

- control and potentially prohibit the export of our products; and

- change certain terms and conditions in our contracts.

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

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

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

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

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

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

Table of Contents

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

- termination of contracts;

- forfeiture of profits;

- suspension of payments;

- fines; and

- suspension or prohibition from conducting business with the U.S. government.

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

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

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

- the Federal Acquisition Regulations, or FAR, and agency-specific regulations supplemental to the Federal Acquisition Regulations, which comprehensively regulate the procurement, formation, administration and performance of government contracts;

- the business ethics and public integrity obligations, which govern conflicts of interest and the hiring of former government employees, restrict the granting of gratuities and funding of lobbying activities and incorporate other requirements such as the Anti-Kickback Act and Foreign Corrupt Practices Act;

- export and import control laws and regulations; and

- laws, regulations and executive orders restricting the use and dissemination of information classified for national security purposes and the exportation of certain products and technical data.

Foreign governments typically also have laws and regulations governing contracts with their respective agencies. These foreign laws and regulations affect how we and our customers conduct business and, in some instances, impose added costs on our business. Any changes in applicable laws and

regulations could restrict our ability to maintain our existing contracts and obtain new contracts, which could limit our ability to conduct our business and materially adversely affect our revenues and results of operations.

Risks Related to Dependence on or Competition From Third Parties

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

The nature of clinical trials and our business strategy of outsourcing substantially all of our research and development and manufacturing work require that we rely on clinical research centers and other contractors to assist us with research and development, clinical and non-clinical testing (including animal efficacy studies under the

Table of Contents

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

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

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

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

Finally, third-party manufacturers, suppliers and distributors, like most companies, have been adversely affected by the current credit crisis and weakening of the global economy. It has, for example, become increasingly challenging for companies to secure debt capital to fund their operations as financial institutions have significantly curtailed their lending activities. If our third-party suppliers continue to experience financial difficulties as a result of weakening demand for their products or for other reasons and are unable to obtain the capital necessary to continue their present level of operations, they may have to reduce their activities. A material deterioration in their ability to meet their obligations to us could cause a delay in our development programs and potential future sales and jeopardize our ability to meet our obligations under our contracts with the government or other third parties.

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

The biopharmaceutical industry is characterized by rapid and significant technological change. Our success will depend on our ability to develop and apply our technologies in the design and development of our product candidates and to establish and maintain a market for our product candidates. There are many organizations, both public and private, including major pharmaceutical and chemical companies, specialized biotechnology firms, universities and other research institutions engaged in developing pharmaceutical and biotechnology products. Many of these organizations have substantially greater financial, technical, intellectual property, research and development, and human resources than we have. Competitors may develop products or other technologies that are more effective than any that we are developing or may obtain FDA approval for products more rapidly.

Table of Contents

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

- are more effective;
- have fewer or less severe adverse side effects;
- are more adaptable to various modes of dosing;
- obtain orphan drug exclusivity that blocks the approval of our application for seven years;

- are easier to administer; or

- are less expensive than the products or product candidates that we are, or in the future will be, developing.

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

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

Risks Related to Political and Social Factors

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

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

Risks Related to Intellectual Property

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

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

Table of Contents

third-party patent applications and patents could significantly reduce the coverage of the patents owned, optioned by or licensed to us or our collaborators and limit our ability or that of our collaborators to obtain meaningful patent protection.

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

We are also aware of pending applications directed to pegylated butyrylcholinesterase. Protexia® incorporates butyrylcholinesterase. If patents are issued to third parties that cover Protexia® or other products, we may be required to obtain a license under such patents or obtain alternative technology. We cannot provide any assurances that such licenses will be available or that the terms thereof will be reasonable or that we will be able to develop alternative technologies. If we do not obtain such a license and if a legal action based on such patent was to be brought against us or our distributors, licensees or collaborators, we cannot provide any assurances that we or our distributors, licensees or collaborators would prevail or that we have sufficient funds or resources to defend such claims.

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

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

Risks Related to Regulatory Approvals and Legislation

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

Our research and development involves the controlled use of hazardous materials and chemicals. We are subject to federal, state, local and foreign laws governing the use, manufacture, storage, handling and disposal of such materials. We will not be able to eliminate the risk of accidental contamination or injury from these materials. In the event of such an accident, we could be forced to pay significant damages or fines, and these damages could exceed our

resources and any applicable insurance coverage. In addition, we may be required to incur significant costs to comply with regulatory requirements in the future.

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

The U.S. Public Readiness Act was signed into law in December 2005 and creates general immunity for manufacturers of countermeasures, including security countermeasures (as defined in Section 319F-2(c)(1)(B) of that act), when the U.S. Secretary of Health and Human Services issues a declaration for their manufacture,

Table of Contents

administration or use. The declaration is meant to provide general immunity from all claims under state or federal law for loss arising out of the administration or use of a covered countermeasure. Manufacturers are excluded from this protection in cases of willful misconduct. Although our anthrax countermeasures have been covered under the general immunity provisions of the Public Readiness Act since October 1, 2008, there can be no assurance that the Secretary of Health and Human Services will make other declarations in the future that would cover any of our other product candidates or that the U.S. Congress will not act in the future to reduce coverage under the Public Readiness Act or to repeal it altogether.

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

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

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

Risks Related to Personnel

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

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

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

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

Table of Contents

be necessary to defend against these claims. Even if we are successful in defending against these claims, litigation could result in substantial costs and distract management.

Risks Related to our Common Stock

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

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

$2.1 million we would receive if all of the warrants issued in that offering were exercised). Raising capital in this manner or any other manner may depress the market price of our stock, and any such financing(s) will dilute our existing shareholders.

In addition, as of March 31, 2009, we had outstanding options to purchase approximately 4.9 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 March 31, 2009, we had outstanding debt including accrued and unpaid interest to noteholders of approximately $13.8 million in the form of convertible notes, which are convertible at $10 per share. As of March 31, 2009, we had outstanding warrants exercisable for approximately 13.2 million shares of common stock. 9.4 million 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.

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

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

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

Table of Contents

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

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

Item 6. Exhibits.

No.	Description
1.1.3	Engagement Letter dated March 23, 2009 by and among the Company and Rodman & Renshaw, LLC (incorporated by reference to Exhibit 1.1 to the Company's Current Report on Form 8-K filed with the SEC on March 27, 2009 (File No. 001-32587)).
1.1.4	Engagement Letter dated March 23, 2009 by and among the Company and Caris & Company (incorporated by reference to Exhibit 1.2 to the Company's Current Report on Form 8-K filed with the SEC on March 27, 2009 (File No. 001-32587)).
10.13.1	Form of 1st Amendment, dated January 21, 2009, to Employment Agreement by and between the Company and David P. Wright.
10.19.3	Consent, Assumption and Second Loan Modification Agreement, dated as of March 31, 2009, by and among Silicon Valley Bank, Oxford Finance Corporation and PharmAthene, Inc.
10.36.1	Amended and Restated Manufacturing and Marketing Licence Agreement between the Secretary of State for Defence as represented by the Defence Science and Technology Laboratory (Dstl) and PharmAthene UK Ltd. in respect of Recombinant [***] Vaccine, dated February 11, 2009.
10.37.1	Amended and Restated Licence Agreement between the Secretary of State for Defence as represented by the Defence Science and Technology Laboratory (Dstl) and PharmAthene UK Ltd. in respect of Recombinant [***] Vaccine, dated February 5, 2009.
10.48	Form of Securities Purchase Agreement dated as of March 23, 2009 between the Company and the Purchasers party thereto (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on March 27, 2009 (File No. 001-32587)).
10.49	Form of Warrant in connection with Securities Purchase Agreement dated as of March 23, 2009 (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed with the SEC on March 27, 2009 (File No. 001-32587)).
31.1	Certification of Principal Executive Officer Pursuant to SEC Rule 13a-14(a)/15d-14(a).
31.2	Certification of Principal Financial Officer Pursuant to SEC Rule 13a-14(a)/15d-14(a).
32.1	Certification of Principal Executive Officer Pursuant to 18 U.S.C. Section 1350.
32.2	Certification of Principal Financial Officer Pursuant to 18 U.S.C. Section 1350.

* Portions of this exhibit have been omitted pursuant to a request for confidential treatment.

Table of Contents

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused the report to be signed on its behalf by the undersigned, thereunto duly authorized.

PHARMATHENE, INC.

Dated: May 15, 2009

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

Dated: May 15, 2009

By: /s/ Christopher C. Camut
Christopher C. Camut
Chief Financial Officer

FORM OF AMENDMENT TO EMPLOYMENT AGREEMENT

This **1st AMENDMENT TO EMPLOYMENT AGREEMENT** (this "**Amendment**") is made and entered into effective January 21, 2009 (the "**Effective Date**") by and between David P. Wright (the "**Executive**") and PharmAthene, Inc., a Delaware corporation (the "**Company**").

WITNESSETH:

WHEREAS, the Executive and the Company are parties to an employment agreement, dated August 3, 2007 (the "**Agreement**"); and

WHEREAS, the parties, with the authorization of the Company's Board of Directors, desire to amend the Agreement to modify the vesting schedule of a restricted share grant previously awarded to the Executive.

NOW, THEREFORE, in consideration of the foregoing and of the mutual covenants and obligations hereinafter set forth, the parties hereto hereby agree as follows:

1. The final two sentences of Section 3.e.i of the Agreement are amended and restated in their entirety as follows:

   "The shares issued under the Initial Restricted Stock Award (the "**Restricted Shares**") shall, subject to possible acceleration of vesting as otherwise provided herein, vest over a 5 year period with (a) 25% of the Restricted Shares subject to the Initial Restricted Stock Award vesting on August 30, 2008, (b) 6.25% of the Restricted Shares vesting monthly over the four months September through December 2008, (c) 12.5% of the Restricted Shares vesting on August 30, 2009, and (d) 18.75% of the Restricted Shares subject to the Initial Restricted Stock Award vesting on each of August 30, 2010, August 30, 2011 and August 30, 2012 such that 100% of the Restricted Shares shall be vested on August 30, 2012. All Restricted Shares (including any shares received by the Executive with respect to the Restricted Shares as a result of stock dividends, stock splits or any other form of recapitalization) shall be subject to (1) customary restrictions on ownership and transfer set forth in the restricted stock agreement and (2) the vesting requirements set forth in this Section 3(e); provided, however, that such vesting requirements shall be modified upon the termination of the Executive's employment, other than in the event of Voluntary Termination or Termination for Cause, in accordance with Section 9 of this Agreement."

2. Executive acknowledges and agrees that as of the Effective Date 25% of the Initial Restricted Stock Award vested on August 30, 2008, that an additional 6.25% of the Initial Restricted Stock Award vested over the four months September through December

2008, and that no other Restricted Shares shall be deemed to be vested. In accordance with Section 1 of this Amendment and the Company's 2007 Long-Term Incentive Plan, no other Restricted Shares shall vest until August 30, 2009.

3. Except as specifically set forth above in Sections 1 and 2 of this Amendment, the Agreement remains unchanged and in full force and effective. Capitalized terms not otherwise defined in this Amendment shall have the respective meanings set forth in the Agreement.

4. As of the Effective Date and without any further action by the parties, the restricted stock agreement issued in connection with the Initial Restricted Stock Award shall be deemed modified to be consistent with the changes set forth in Sections 1 and 2 of this Amendment.

IN WITNESS WHEREOF, the parties have duly executed this Amendment effective as of the Effective Date.

EXECUTIVE

_____
David P. Wright
Dated:

PHARMATHENE, INC.
(fka/HEALTHCARE ACQUISITION CORP.)

By _____
Name: Christopher C Camut
Title: VP & CFO
Dated:

CONSENT, ASSUMPTION AND SECOND LOAN MODIFICATION AGREEMENT

This Consent, Assumption and Second Loan Modification Agreement (this "Loan Modification Agreement") is entered into as of March 31, 2009, by and among **SILICON VALLEY BANK**, a California corporation, with its principal place of business at 3003 Tasman Drive, Santa Clara, California 95054 and with a loan production office located at 8020 Tower Crescent Drive, Suite 475, Vienna, Virginia 22182 ("SVB"), as agent ("Agent"), and the Lenders, SVB and **OXFORD FINANCE CORPORATION** ("Oxford"), and **PHARMATHENE, INC.** ("New Borrower") (successor by merger with Pharmathene U.S. Corporation, a Delaware corporation, the "Existing Borrower"), a Delaware corporation with its chief executive office located at One Park Place, Suite #450, Annapolis, MD 21401.

1. DESCRIPTION OF EXISTING INDEBTEDNESS AND OBLIGATIONS. Among other indebtedness and obligations which may be owing by Existing Borrower to Lenders, Existing Borrower is indebted to Lenders pursuant to a loan arrangement dated as of March 30, 2007, evidenced by, among other documents, a certain Loan and Security Agreement dated as of March 30, 2007, between Existing Borrower and Lenders, as amended by a certain Consent and First Loan Modification Agreement dated as of March 20, 2008, between Existing Borrower and Lenders (the "First Consent") (as amended, the "Loan Agreement"). Capitalized terms used but not otherwise defined herein shall have the same meaning as in the Loan Agreement. Currently SVB and Oxford are the only Lenders.

2. ASSUMPTION. New Borrower has merged with Existing Borrower and is the surviving legal entity of such merger. New Borrower hereby joins the Loan Agreement and each of the Loan Documents and all other documents and instruments in connection with the Loan Agreement, and agrees to comply with and be bound by all of the terms, conditions and covenants of the Loan Agreement and Loan Documents, as if it were originally named a "Borrower" therein. Without limiting the generality of the preceding sentence, New Borrower hereby assumes and agrees to pay and perform when due all present and future indebtedness, liabilities and obligations of Existing Borrower under the Loan Agreement and the Loan Documents, including, without limitation, the Obligations. All present and future obligations of Existing Borrower shall be deemed to refer to all present and future obligations of New Borrower. New Borrower acknowledges that the Obligations are due and owing to Lenders from Existing Borrower, without any defense, offset or counterclaim of any kind or nature whatsoever as of the date hereof. All references in the Loan Documents, and this Loan Modification Agreement, to "Borrower" shall be deemed to refer to New Borrower.

3. GRANT OF SECURITY INTEREST. To secure the prompt payment and performance of all of the Obligations, New Borrower hereby grants the Collateral Agent, for the benefit of the Lenders to secure the payment and performance in full of all of the Obligations, a continuing security interest in, and pledges to the Collateral Agent, for the benefit of the Lenders, the Collateral, wherever located, whether now owned or hereafter acquired or arising, and all proceeds and products thereof. New Borrower represents, warrants, and covenants that the security interest granted herein is and shall at all times continue to be a first priority perfected security interest in the Collateral (subject only to Permitted Liens that may have superior priority to Lenders' Lien under this Agreement). New Borrower further covenants and agrees that by its execution hereof it shall provide all such information, complete all such forms, and take all such actions, and enter into all such agreements, in form and substance reasonably satisfactory to Lenders and Agent that are reasonably deemed necessary by Lenders and Agent in order to grant a valid, perfected security interest to Lenders in the Collateral. New Borrower hereby authorizes Lenders and Agent to file financing statements, without notice to New Borrower, with all appropriate jurisdictions in order to perfect or protect Lenders' interest or rights hereunder, including a notice that any disposition of the Collateral, by either the New Borrower or any other Person, shall be deemed to violate the rights of the Lenders under the Code.

4. REPRESENTATIONS AND WARRANTIES. New Borrower hereby represents and warrants to Lenders that all representations and warranties in the Loan Documents made on the part of Existing Borrower are true and correct on the date hereof with respect to New Borrower, with the same force and effect as if New Borrower were named as "Borrower" in the Loan Documents in addition to Existing Borrower.

5. RATIFICATION OF EXISTING DOCUMENTS. New Borrower ratifies, confirms and reaffirms, all and singular, the terms and conditions of the Loan Documents, including without limitation the Loan Agreement, and acknowledges, confirms and agrees that, except as stated in this Loan Modification Agreement, the Loan Documents shall remain in full force and effect.

6. DELIVERY OF DOCUMENTS. New Borrower hereby agrees that the following documents shall be delivered to Lenders contemporaneously with delivery of this Loan Modification Agreement, each in form and substance satisfactory to Lenders:

A. a certificate of the Secretary of New Borrower with respect to certificate of incorporation, by-laws, incumbency and resolutions authorizing the execution and delivery of this Loan Modification Agreement;

B. consent of the shareholders of New Borrower authorizing the execution and delivery of this Loan Modification Agreement and the other transaction documents (if required by New Borrower's corporate documents);

C. a long form certificate of the Secretary of State of Delaware certified within the past thirty (30) days as to New Borrower's existence and good standing;

D. Certificates of Good Standing/Foreign Qualification, from each state in which New Borrower is authorized to do business;

E. a Perfection Certificate for New Borrower;

F. a Securities Account Control Agreement (SVB Securities);

G. Amendment to that certain Deposit Account Control Agreement among Agent, Manufacturers and Traders Trust Company, and Existing Borrower;

H. a certified copy of the Certificate of Compliance, as amended, for Pharmathene Canada, Inc., a Canadian company and Guarantor pursuant to that certain Unlimited Guaranty dated March 30, 2007 ("Pharmathene Canada");

I. a Certificat d' Attestation (Quebec) for Pharmathene Canada;

J. Supplemental Deed concerning the Charge Over Shares by New Borrower in connection with pledge of stock in Pharmathene UK Limited ("Pharmathene UK");

K. the results of UCC searches with respect to the Collateral for New Borrower indicating no Liens other than Permitted Liens and otherwise in form and substance satisfactory to Lenders;

L. a legal opinion of New Borrower's counsel (authority and enforceability), in form and substance acceptable to Lenders;

M. insurance certificates (Acord 25 and Acord 28 forms) for New Borrower;

N. certificates pursuant to the existing Warrants setting forth adjustments, if any; and

O. such other documents as Lenders may reasonably request.

7. DESCRIPTION OF COLLATERAL. Repayment of the Obligations is secured by the Collateral as described in the Loan Agreement (together with any other collateral security granted to Agent, for the ratable benefit of the Lenders, the "Security Documents").

Hereinafter, the Security Documents, together with all other documents evidencing or securing the Obligations shall be referred to as the "Existing Loan Documents".

8. DESCRIPTION OF CHANGE IN TERMS.

A. Modifications to Loan Agreement.

1 The Loan Agreement shall be amended by deleting the following provision appearing as Section 6.2(i)**:**

"(i) as soon as available, but no later than thirty (30) days after the last day of each month, a company prepared consolidated balance sheet and income statement covering Borrower's consolidated operations for such month certified by a Responsible Officer and in a form acceptable to Agent;"

and inserting in lieu thereof the following:

"(i) as soon as available, but no later than thirty (30) days after the last day of each month, a company prepared consolidated and consolidating balance sheet and income statement covering Borrower's and each of its Subsidiary's operations for such month certified by a Responsible Officer and in a form acceptable to Agent;"

2 The Loan Agreement shall be amended by deleting the following provision appearing as Section 6.11 thereof entitled "**Minimum Cash at SVB"**:

"**6.11 Minimum Cash at SVB**. Borrower shall maintain, at all times, at a segregated account at either SVB or SVB Securities, unrestricted and unencumbered cash or Cash Equivalents in the amount of at least one and one-quarter (1.25) times all Obligations of Borrower to the Lenders."

and inserting in lieu thereof the following:

"**6.11 Minimum Cash at SVB**. Borrower shall maintain, at all times, at a segregated account at either SVB or SVB Securities, unrestricted and unencumbered cash or Cash Equivalents in an amount equal to at least one (1.0) times all Obligations of Borrower to Lenders. Notwithstanding the foregoing, commencing as of January 1, 2009, the amount required in such account shall be reduced to an amount equal to at least one-half (0.50) times all Obligations of Borrower to Lenders."

3 The Loan Agreement shall be amended by inserting the following new definitions to appear alphabetically in Section 13.1 thereof:

" "**Reduction Item**" means the novation of certain agreements between the National Institutes of Health, Avecia Biologics Limited and Avecia Biologics Inc. to substitute Pharmathene UK instead of Avecia Biologics Limited and Avecia Biologics Inc. (prior owners of the vaccines business) and satisfaction of all conditions to Pharmathene UK receiving back payments and future payments, and the actual receipt of all past due contractual payments."

"**Pharmathene UK**" means Pharmathene UK Limited, a business entity formed under the laws of the United Kingdom and a wholly owned Subsidiary of Borrower."

"**Subordination Agreements**" means collectively those certain Subordination Agreements dated as of the Effective Date between Agent and certain creditors of Borrower."

4 The Loan Agreement shall be amended by deleting the following definition of "Permitted Investment" appearing in Section 13.1 thereof:

"**Permitted Investments**" are:

(a) Investments shown on the Perfection Certificate and existing on the Effective Date;

(b) Permitted Acquisitions;

(c) Permitted Joint Ventures; and

(d) Cash Equivalents."

and inserting in lieu thereof the following:

"**Permitted Investments**" are:

(a) Investments shown on the Perfection Certificate and existing on the Effective Date;

(b) Permitted Acquisitions;

(c) Permitted Joint Ventures;

(d) Cash Equivalents; and

(e) (i) Investments of Subsidiaries in or to other Subsidiaries or Borrower and (ii) Investments by Borrower in Pharmathene UK not to exceed Four Hundred Thousand Dollars ($400,000) in the aggregate per calendar month."

B. Consent.

1 Notwithstanding the terms of the First Consent, Lenders hereby acknowledge, confirm, and agree that Pharmathene UK is not required to become a co-borrower or a secured guarantor under the Loan Agreement, nor will Lenders obtain a first perfected lien in all of Pharmathene UK's assets, provided that Borrower shall; (i) execute and deliver a pledge agreement, in form and substance acceptable Lenders, granting a first perfected security interest (fixed charge) in sixty-five percent (65%) of Borrower's stock of Pharmathene UK contemporaneously with the execution of this Loan Modification Agreement, and (ii) comply with the Loan Agreement as amended by this Loan Modification Agreement.

C. Waiver and Borrower's Representations.

1 Lenders hereby waive Borrower's existing defaults under the Loan Agreement by virtue of Borrower's failure to timely comply with the negative covenant set forth in Section 7.7 of the Loan Agreement (Distributions; Investments), as of the months ending August 31, 2008, through and including December 31, 2008. Lenders' waiver of Borrower's compliance of said negative covenant shall apply only to the foregoing specific time periods. Lenders hereby consent to the merger of New Borrower with Existing Borrower (with new Borrower as successor by said merger), which merger was consummated on February 27, 2009.

In consideration for the forgoing waiver and in order to induce Lenders to provide such waiver, Borrower represents that (i) Borrower made the following Investments in Pharmathene UK; (a) One Million Four Hundred Twenty Nine Thousand Three Hundred Sixteen Dollars ($1,429,316) during the month ended August 31, 2008, (b) Three Hundred Thirty Seven Thousand Six Dollars ($337,006) during the month ended September 30, 2008, (c) Seven Hundred Forty Nine Thousand Ninety Five Dollars ($749,095) during the month ended October 31, 2008, (d) Nine Hundred Fifty Four Thousand One Hundred Eighty One Dollars ($954,181) during the month ended November 30, 2008, and (e) Two Hundred Ninety Five Thousand Five Hundred Five Dollars ($295,505) during the month ended December 31, 2008 (such amounts are not cumulative); and (ii) the Reduction Item occurred on December 31, 2008 in the amount of Two Million Twenty Five Thousand Twenty Six Dollars ($2,025,026) and such funds were deposited and maintained in the Borrower's name in an account with SVB or an affiliate of SVB.

9. POST CLOSING. The failure of New Borrower to furnish Lenders with the following documents to the full satisfaction of Lenders on or before ten (10) business days from the date hereof, unless otherwise noted, shall constitute an immediate Event of Default under the Loan Agreement, for which there shall be no grace or cure period:

A. New Borrower shall deliver to Lenders on or before April 30, 2009, a Landlord's Consent concerning New Borrower's One Park Place, Suite #450, Annapolis, MD 21401 location, in form and substance acceptable to Lenders, in their sole and absolute discretion.

B. New Borrower shall deliver to Lenders ratifications of the Subordination Agreements from all Subordinated Creditors of New Borrower who executed such an agreement with Lenders.

10. FEES. New Borrower shall pay to Lenders a modification fee equal to Ten Thousand Dollars ($10,000) to be shared between the Lenders pursuant to their respective Commitment Percentages, which fee shall be due on the date hereof and shall be deemed fully earned as of the date hereof. Borrower shall also reimburse Lenders for all legal fees and expenses incurred in connection with this amendment to the Existing Loan Documents.

11. CONSISTENT CHANGES. The Existing Loan Documents are hereby amended wherever necessary to reflect the changes described above.

12. NO DEFENSES OF BORROWER. New Borrower hereby acknowledges and agrees that New Borrower has no offsets, defenses, claims, or counterclaims against Lenders with respect to the Obligations, or otherwise, and that if Borrower now has, or ever did have, any offsets, defenses, claims, or counterclaims against Lenders, whether known or unknown, at law or in equity, all of them are hereby expressly WAIVED and New Borrower hereby RELEASES Lenders from any liability thereunder.

13. CONTINUING VALIDITY. New Borrower understands and agrees that in modifying the existing Obligations, Lenders are relying upon Borrower's representations, warranties, and agreements, as set forth in the Existing Loan Documents. Except as expressly modified pursuant to this Loan Modification Agreement, the terms

of the Existing Loan Documents remain unchanged and in full force and effect. Lenders' agreement to modifications to the existing Obligations pursuant to this Loan Modification Agreement in no way shall obligate Lenders to make any future modifications to the Obligations. Nothing in this Loan Modification Agreement shall constitute a satisfaction of the Obligations. It is the intention of Lenders and New Borrower to retain as liable parties all makers of Existing Loan Documents, unless the party is expressly released by Lenders in writing. No maker will be released by virtue of this Loan Modification Agreement.

14. COUNTERSIGNATURE. This Loan Modification Agreement shall become effective only when it shall have been executed by New Borrower and Lenders.

[The remainder of this page is intentionally left blank]

This Loan Modification Agreement is executed as a sealed instrument under the laws of the Commonwealth of Massachusetts as of the date first written above.

BORROWER:

PHARMATHENE, INC.

By: /s/ Christopher C. Camut

Name: Christopher C. Camut

Title: VP, Chief Financial Officer

AGENT:

SILICON VALLEY BANK

By: /s/ Patrice Pratt

Name: Patrice Pratt

Title: Relationship Manager

LENDERS:

OXFORD FINANCE CORPORATION

By: /s/ Timothy A. Lax

Name: Timothy A. Lax

Title: COO

SILICON VALLEY BANK

By: /s/ Patrice Pratt

Name: Patrice Pratt

Title: Relationship Manager

The undersigned Pharmathene Canada ratifies, confirms and reaffirms, all and singular, the terms and conditions of (i) that certain Unconditional Guaranty by Pharmathene Canada in favor of Lenders dated March 30, 2007 (the "Guaranty"), and (ii) that certain Hypothecation of Movables between Pharmathene Canada and Lenders dated March 30, 2007 (the "Hypothecation"), and acknowledges, confirms and agrees that all references in each of the Guaranty and the Hypothecation to "Borrower" shall mean New Borrower, and each of the Guaranty and the Hypothecation shall remain in full force and effect and shall in no way be limited by the execution of this Loan Modification Agreement, or any other documents, instruments and/or agreements executed and/or delivered in connection herewith.

PHARMATHENE CANADA, INC.

By: /s/ Christopher C. Camut

Name: Christopher C. Camut

Title: Treasurer

PharmAthene, Inc.
Confidential Materials Omitted and Filed Separately with the
Securities and Exchange Commission
Confidential Portions denoted by [***]

PRIVATE BETWEEN THE PARTIES

AMENDED AND RESTATED

MANUFACTURING AND MARKETING LICENSE AGREEMENT

between

THE SECRETARY OF STATE FOR DEFENCE

as represented by

THE DEFENCE SCIENCE AND TECHNOLOGY LABORATORY (Dstl)

and

PHARMATHENE UK LTD.

in respect of

RECOMBINANT *[***]* VACCINE

PRIVATE BETWEEN THE PARTIES

THIS AMENDED AND RESTATED AGREEMENT is made the 11th day of February, 2009

BETWEEN

THE SECRETARY OF STATE FOR DEFENCE acting through the Defence Science and Technology Laboratory [***] (hereinafter referred to as the "**Licensor**"**)** of the one part

AND

PHARMATHENE UK LTD. Having an address at Johnson Mathey Building, PO Box 88, Haverton Hill Road, Billingham, Cleveland TS23 1XN (hereinafter referred to as the "**Licensee**"**)** of the second part
hereinafter referred to collectively as the "**Parties**" or in the singular as a "**Party**"**.**

WHEREAS

A**.** The Licensor and Avecia Limited entered into a Manufacturing and Marketing License Agreement as of December 4, 2006, (the "License Agreement");

B. With the consent of the Licensor, the License Agreement was assigned by Avecia Limited to Avecia Biologics Limited;

C. The License Agreement was amended by a Letter Agreement dated March 20, 2008 by and between Licensor and Avecia Biologics Limited (the "Amended Agreement");

D. With the consent of the Licensor, Avecia Biologics Limited assigned the Amended Agreement to the Licensee; and

E. The Licensor and the Licensee desire to amend and restate the Amended Agreement.

NOW IT IS HEREBY AGREED BETWEEN THE PARTIES AS FOLLOWS:-

1. DEFINITIONS AND INTERPRETATION

1.1. For the purposes of this Agreement, unless the context clearly or necessarily indicates otherwise, the following words and phrases shall have the meanings set forth below:

1.1.1. **"Agreement"** shall mean this Amended and Restated Agreement.

1.1.2. **"[***] Vaccine"** shall mean [***] which is produced using recombinant technology.

1.1.3. **"[***] Vaccine Dose"** shall mean the quantity of a formulation containing [***] Vaccine given to an individual in a single immunisation.

1.1.4. **"Commencement Date"** shall mean the day and year first above written.

1.1.5. **"The Intellectual Property"** shall mean the Patents and know-how, technical information and materials (including but not limited to cell lines) owned by the Licensor necessary or useful to develop,

manufacture, have manufactured, import use, keep, sell and offer to sell the [***] Vaccine and the [***] Vaccine Dose.

1.1.6. **"Licensed Product"** shall mean [***] Vaccine Dose the manufacture, use, sale, keeping, importing or exporting of which would, in the absence of the licence granted under this Agreement, constitute an infringement of the Patents (for the avoidance of doubt, where the definition of Patents includes pending patent applications, this includes doing anything in respect of a claim in a pending patent application that had a patent been granted on such a claim would constitute infringement of that claim) or that uses other Intellectual Property.

1.1.7. **"Net Sales Price"** shall mean the actual sale price for Licensed Product invoiced by the Licensee or, where applicable, a Partner of the Licensee less any separate charges identified for packaging, transportation, insurance and sales taxes and (where applicable) any royalties paid to any Third Party in respect of the Licensed Product in question. If the Licensee sells or disposes of any Licensed Product on otherwise than an arms length transaction basis at the open full market price (eg to another company in the Licensee's group or under an off-set or barter agreement), the open market price shall be taken as the actual sales price.

1.1.8. **"PIL"** shall mean [***].

1.1.9. **"Patents"** The patents and patent applications set out in Schedule 1 and any equivalents thereof, and any divisionals, continuations, continuations-in-part, re-filings or re-issues of any of the foregoing, and any other patent applications or patents that would be infringed by manufacture, use or sale of an [***] Vaccine or component thereof.

1.1.10. **"Partner"** shall mean any Third Party organisation which the Licensee elects to involve in the performance of a Supply Contract.

1.1.11. **"Third Party"** shall mean any person other than the Government of the United Kingdom.

1.2. The singular shall include the plural and vice versa, and the masculine shall include the feminine or the neuter gender and vice versa.

1.3. Unless the context otherwise indicates, references to Articles and Articles and Schedule, are to articles and Articles and the Schedule of this Agreement.

1.4. Headings to Articles in this Agreement are included for ease of reference only and shall not have any effect on the construction or the interpretation of this Agreement.

1.5. References in this Agreement to any statute or statutory provision shall include any statute or statutory provision which amends, extends, consolidates or replaces the same and shall include any orders, regulations, instruments or other subordinate legislation made under the relevant statute.

PRIVATE BETWEEN THE PARTIES

2. GRANT OF RIGHTS BY THE LICENSOR

2.1. In consideration for the payments to be made by the Licensee to the Licensor under the provisions of Article 3 below, the Licensor, warranting that he has the right to do so, hereby grants and the Licensee hereby accepts a nonexclusive worldwide licence to use the Intellectual Property (i) to develop, make, or have made, use, keep, sell, offer to sell, import and export Licensed Products, and (ii) to develop, make, have made, and use [***] Vaccine for the purpose of Licensor exercising the rights and licenses granted to Licensor with respect to Licensed Product.

2.2. Without prejudice to the provisions of Articles 2.3 and 10.3 below, the Licensor undertakes that it shall not whilst this license remains in effect grant a license to any third party for under the Intellectual Property to make, have made, use, keep, import, export, sell or offer to sell Licensed Products or [***] Vaccine.

2.3. For the avoidance of any doubt, the Licensor and any other Department or Agency of the UK Government shall retain the right at any time to use, or authorise others to use the Licensed Products for any UK Government purpose or otherwise to the extent customary pursuant to standard UK Ministry of Defence contracting procedures, and to dispose of products made in consequence of such use but no longer required; and nothing in this Agreement shall be construed as in any way limiting or derogating from such retained rights, nor from any rights of the Crown arising under any other agreement or contract or provision of law.

2.4. Save as permitted under Article 2.5 below, the licence granted under this Agreement is personal to the Licensee and as such shall not be assigned, sub-licensed, mortgaged or in any way dealt with by the Licensee without the prior written consent of the Licensor, which consent shall not be unreasonably withheld, provided that the Licensee may assign the licence and this Agreement without consent in connection with a genuine business reorganisation or to any corporation, association or other business entity which directly or indirectly controls, is controlled by or is under common control with the Licensee. For the avoidance of doubt, consent shall be deemed to be reasonably withheld where the Chief Executive of Dstl receives written notice from an appropriate authority at the Ministry of Defence or other UK Government Department that assignment to such person would damage the essential public or national interest. Any assignment, sub-licensing or mortgaging of this Agreement by the Licensee, otherwise than as permitted by this Article 2.4, without the prior written consent of the Licensor shall immediately invalidate this Agreement and the license granted hereunder.

2.5. Notwithstanding the provisions of Article 2.4 above, the Licensee shall be entitled to employ Partners to assist the Licensee in exercising the Licensee's rights hereunder with respect to Licensed Products subject to the provisions of Article 3 below.

2.6. Save as expressly stated under this Article 2 the Licensee is not authorised hereunder to grant to any Third Party any sub-license under the Patents or to pass to such Third Party any of the Intellectual Property.

PRIVATE BETWEEN THE PARTIES

3. LICENCE PAYMENTS

3.1. In consideration for the grant of rights by the Licensor in Article 2.1 above; the Licensee shall pay to the Licensor a royalty on each and every Licensed Product, equal to [***] of the Net Sales Price of the Licensed Product. Notwithstanding the foregoing, no royalties shall be payable in respect of any samples of Licensed Products which are provided by the Licensee for clinical, product development, marketing development or *bona fide* study purposes. No royalties are payable in respect of supplies of Licensed Products to the UK Ministry of Defence.

3.2. The royalty in respect of a Licensed Product shall become payable by the Licensee under this Agreement when the cost of the Licensed Product is invoiced by Licensee. Where the cost of a Licensed Product is payable in two or more installments, the invoice for each installment will be considered separately for the payment of royalties. If no invoice is issued, royalty will become due on delivery of the Licensed Product concerned.

3.3. The Licensee shall reimburse Licensor for the cost and expense incurred by Licensor after the date of this Agreement for prosecuting and maintaining Patents licensed to Licensee under this Agreement. Should the Licensor wish to abandon a patent, patent application or equivalent forming part of the Intellectual Property, it shall offer it to the Licensee, which shall be entitled to maintain in force the said patent, patent application or equivalent in the name of Licensor at the Licensee's expense but otherwise without charge and, the Licensee shall be responsible for all further expenditure thereon. The Licensee shall retain a royalty free non-exclusive license thereto pursuant to Section 2.1 that is subject to Licensor's obligations under Section 2.2.

3.4. The payments due under Articles 3.1 and 3.3 of this Agreement will fall due half-yearly on 30 June and 31 December and will be payable in accordance with the instructions contained in Articles 3.6 and 3.7 below.

3.5. The Licensor has appointed PIL as its agent to act on its behalf for the administration of royalties and other moneys due under this Agreement. .

3.6. Within sixty (60) days of the end of each half-year period as mentioned in Article 3.4 hereof, the Licensee shall send to PIL (or as otherwise advised) a true and complete statement in writing, including where appropriate a Zero return, of the number of Licensed Products manufactured and sold by or for Licensee during the relevant period, the Net Sales Price derived from sales of such Licensed Products, and the royalty calculated to be payable in respect thereof in accordance with the provisions of Article 3.1.

3.7. All payments due to the Licensor under this Agreement shall be made by the end of the month following the month of the date of receipt of an invoice from PIL and in accordance with the instructions issued with the relevant invoice. All royalty statements, correspondence and payments to PIL under the provisions of this Article 3 shall quote the PIL reference [***].

3.8. All payments due to PIL shall be paid in pounds Sterling plus, if applicable, VAT at the UK rate prevailing at the time of payment. Where a payment due is in a currency other than pounds Sterling, the rate of exchange to be applied shall be the rate of exchange applied by the Bank of England on the date of the relevant invoice for Licensed Product(s) supplied by the Licensee.

PRIVATE BETWEEN THE PARTIES

3.9. Without prejudice to the provisions of Article 10.2, if the Licensee fails to make any payment to the Licensor within the time specified in this Agreement, then the Licensee shall be liable to pay interest on the outstanding payment calculated at [***] per annum with effect from the date on which the payment originally fell due, where x[***].

3.10. Subject to the provisions of Article 3.11 below, the Licensee shall keep at its usual place of business proper records and books of account showing the quantities and Net Sales Price of all Licensed Products supplied by the Licensee and its Partners under this Agreement and such records and books shall be kept separate from any records and books not relating solely to the Licensed Products. Such records and books of account shall contain such true entries (complete in every particular) as may be necessary or proper for enabling the amount of the payments due to the Licensor under this Agreement to be ascertained. The Licensor or PIL by giving no less than ten (10) working days notice shall be entitled to inspect such records and books. The Licensee shall, and shall ensure that its Partners shall, make the appropriate records and books of account available to inspection at all times during office hours by the Licensor or PIL or their duly authorised agent or representative who shall be entitled to take copies of or extracts from the same. In addition to the foregoing, the Licensee shall also provide the Licensor or PIL or their duly authorised agent or representative with any other information which may be necessary or appropriate with a view to determining or verifying the royalties due under this Agreement. In the event that such inspection or audit should reveal an underreporting in the royalties payable under this Agreement, the Licensee shall make up any shortfall within thirty (30) days of written notification and, in the event that the said shortfall is more than [***], shall reimburse the Licensor or PIL in respect of any professional charges incurred for such audit or inspection.

3.11. The books of account referred to in Article 3.10 above shall be kept for a minimum of six years after any relevant transaction and thereafter in accordance with applicable commercial law.

3.12. In accordance with the provisions of Article 11 (Consequences of Termination), the provisions of this Article 3 shall continue to apply notwithstanding termination or expiry of this Agreement until all royalties properly owed by the Licensee to the Licensor in accordance with

this Article 3 have been paid to the Licensor.

3.13. In the event that any of the patents, patent applications or equivalents listed in the Schedule expire or are abandoned or revoked, or are reduced in scope such that operation within the scope of a patent claim to manufacture or sell Licensed Products is no longer necessary, but it remains necessary for the Licensee to use some or all of the other Intellectual Property in order to fulfill an extant order for the Licensed Products, then the Licensee shall have the right to request a meeting of the parties at which the parties shall negotiate in good faith with a view to agreeing upon an appropriate reduction to the royalty payable under this Agreement.

3.14. The Licensor may himself at any time, terminate the arrangements with PIL by notice in writing to the Licensee and in which case "the Licensor" will be substituted for PIL in this Article 3.

PRIVATE BETWEEN THE PARTIES

4. OWNERSHIP, AND PROTECTION, OF INTELLECTUAL PROPERTY

4.1. Both of the Parties acknowledge that nothing contained in this Agreement shall affect the ownership of any intellectual property existing at the Commencement Date and which is owned by either of the Parties.

4.2. Both the Parties acknowledge that nothing contained in this Agreement shall affect the arrangements for the protection of information which are contained in the Contracts.

4.3. The Licensee shall promptly and fully notify the Licensor in writing of the following that comes to the notice of the Licensee during the term of this Agreement:

4.3.1. any actual, threatened or suspected infringement by any Third Party of the patents listed in Schedule 1 or, if granted, any patent that might be granted pursuant to a patent application listed in Schedule 1; and

4.3.2. any proceedings commenced or threatened against the Licensee in which it is alleged that any patent listed in Schedule 1 is invalid and/or its use would infringe Third Party rights, or that use of any of the know how or information, or material contained in any patent application listed in Schedule 1 would infringe Third Party rights.

4.4. In the event that the Licensor decides (in the circumstances referred to in Article 4.3.1 above) to institute any proceedings or (in the circumstances referred to in Article 4.3.2 above) to defend any proceedings instituted against the Licensee with respect to the validity of a patent listed in Schedule 1, the Licensee shall render to the Licensor at the Licensor's expense such reasonable assistance in connection with such proceedings as the Licensor may request. For the avoidance of doubt, Licensee rather than Licensor shall have the sole right to defend any proceeding against Licensee as to infringement of Third Party rights.

4.5. Nothing herein shall oblige the Licensor to institute proceedings in the circumstances referred to in Article 4.3.1 above, or to defend any proceedings in the circumstances referred to in Article 4.3.2 above with respect to the validity of a patent listed in Schedule 1. In the event that the Licensor decides not to institute proceedings in the circumstances referred to in Article 4.3.1 or defend any proceedings in the circumstances of Article 4.3.2 above with respect to the validity of a patent listed in Schedule 1, the Licensor will allow the Licensee, if necessary in the Licensor's name, to institute or defend such proceedings at its own expense, in which event:

4.5.1. the Licensee shall have sole control of the proceedings and shall take or conduct such action in its discretion in any way that it deems necessary or appropriate; and

4.5.2. the Licensor shall render to the Licensee at the Licensee's expense such reasonable assistance (including performing such acts and executing such documents) in connection with such proceedings, as the Licensee may request; and

4.5.3. the Licensee shall be responsible for all costs and expenses arising there from and shall be solely responsible for any damages payable to the third party and for satisfying any award or judgment in favour of any third party and shall be solely entitled to the full benefit of all

---

PRIVATE BETWEEN THE PARTIES

remedies awarded including but not limited to all damages and other sums which may be paid or awarded as a result thereof, except that in the event that Licensee recovers damages in such an action, then Licensee shall pay Licensor the lower of (i) fifty percent of the difference between the amount recovered in such action and the costs attributable to such action or (ii) the royalty that the infringer would have owed in respect to infringing sales at the royalty of Article 3.1 above.

5. WARRANTY AND LIABILITY

5.1. Nothing contained in this Agreement or in any license granted hereunder shall be construed as or deemed to be:-

5.1.1. a representation or warranty that use of any the Patents will not infringe any intellectual property rights owned by a Third Party anywhere in the world; or

5.1.2. an indemnity against costs, damages, royalties, liabilities, expenses or other payments arising out of any proceedings based on infringement brought against the Licensee or customers, agents or distributors of the Licensee; and any such representation, warranty or indemnity is hereby expressly excluded.

5.2. The Licensee shall at all times indemnify and keep indemnified the Licensor against all costs, claims, damages or expenses incurred by the Licensor for which the Licensor may become liable with respect to any product liability claim relating to any products supplied or put into use by the Licensee pursuant to this Agreement. The Licensee shall maintain sufficient product liability insurance coverage to cover its commitments under this Agreement.

5.3. The Licensor shall not be liable for any loss or damage howsoever caused which results from the Licensee's use of the Patents in exercise of the Licensee's rights under this Agreement and the Licensor gives no warranty that anything contained in the Patents, any know-how or information is suitable for any purpose.

6. TAXATION

6.1. If any stamp taxes, registration taxes, turnover taxes, or other taxes, duties or governmental charges are levied on this Agreement by reason of its execution or performance, it shall be the responsibility of the Licensee to pay all such taxes and charges when due.

6.2. The Licensee agrees to release and indemnify the Licensor from and against any liability of whatever nature arising out of the Licensee's failure duly and timely to pay and discharge any of the above-mentioned taxes.

7. DISCLOSURES OF INFORMATION

7.1. Each Party will keep all know-how and other information belonging to the other Party confidential and will not disclose it to any Third Party. Except either Party shall have the right to disclose information and know-how of the other Party

---

PRIVATE BETWEEN THE PARTIES

where such Party engages a Third Party, including an agent (such as PIL) to undertake anything in connection with this Agreement, or in connection with a proposed or permitted assignment of or sublicense under this Agreement, provided that the disclosing Party shall procure that the Third Party is bound likewise to confidentiality obligations and any breaches of the confidentiality obligations by such Third Party shall be treated as a breach of this Agreement by the Party. In addition, the Licensee shall have the right to disclose information, know-how and materials of Licensor in connection with obtaining regulatory approval of a Licensed Product. This restriction does not apply to disclosures made in accordance with Article 7.2 below, or to:

7.1.1. Any information which is or comes into the public domain otherwise than through breach of this Agreement;

7.1.2. Any information already known, at the time of its disclosure, by the recipient;

7.1.3. Any information received from a Third Party which has the right to disclose the same;

7.1.4. Any information that it is necessary to impart to customers of the [***] Licensed Products to ensure its safe and effective use.

7.1.5. Any information required to be disclosed in accordance with an applicable law, rule or regulation or pursuant to a court order or legal proceeding, provided that the disclosing Party takes reasonable available steps to protect the confidentiality thereof.

7.2. The Licensor permits the Licensee to disclose any know-how and information owned or controlled by the Licensor and in the possession of the Licensee as necessary or useful to secure from any government or government agency contracts for the further development, manufacture and supply of Licensed Products.

8. EXPORT CONTROL

8.1. The Licensee shall be responsible for complying with the applicable Export of Goods (Control) Order.

8.2. This Agreement does not grant authority for the Licensee to export from the United Kingdom, any Licensed Product, or any information relating thereto without any necessary license under any applicable Export of Goods (Control) Order. Any necessary export license must be made to the Export Licensing Unit of the Department of Trade and Industry.

9. COMING INTO EFFECT AND DURATION

9.1. This Agreement shall come into effect on the Commencement Date and, unless terminated in accordance with the provisions of Article 10, shall remain in effect indefinitely.

PRIVATE BETWEEN THE PARTIES

10. TERMINATION

10.1. The Licensor shall have the right to terminate this Agreement at any time forthwith by notice in writing to the Licensee on the happening of any of the following events:

10.1.1. if the Licensee is in breach of any of its obligations under this Agreement, and fails to remedy such breach or fails to take steps to substantially remedy the breach within thirty (30) days of a written notice issued to it by the Licensor to do so; or

10.1.2. if the Licensee shall have a Receiver or Liquidator appointed to the whole or any part of its assets or if an Order shall be made or any resolution passed for winding up the Licensee unless such Order or resolution is part of a scheme for amalgamation or reconstruction of the Licensee; or

10.1.3. if the Licensee assigns, sub-licenses, mortgages, or in any other way deals with the license granted under this Agreement without the prior written consent of the Licensor; or

10.1.4. if a person, whether alone or in conjunction with any Connected Person (as defined in section 839 of the Taxes Act 1998) acquires control of the Licensee and the Chief Executive of Dstl receives notice from an appropriate authority at the Ministry of Defence or other UK Government Department that such an acquisition would damage the essential public or national interest, where control of the Licensee means the power of a person to secure either by means of the holding of share or possession of voting power in or in relation to the Licensee or by virtue of any powers conferred by articles of association or other document regulating the Licensee that its affairs are conducted in accordance with the wishes of that person; or

10.1.5. in any other event expressly identified in this Agreement as giving the Licensor a right to terminate.

10.2. The Licensee shall have the right to terminate this Agreement at any time on giving three (3) months prior written notice to the Licensor.

10.3. In the event that Licensee fails to diligently pursue development of a Licensed Product, Licensor shall have the right to notify Licensee in writing of such failure and the specifics thereof and that Licensor intends to terminate the exclusivity of Article 2.2 of this Agreement. Such exclusivity shall terminate thirty (30) days after receipt of such written notice unless prior to the expiration of such thirty (30) days period, Licensee notifies Licensor in writing that such issue is being submitted for resolution pursuant to Article 16.1 of this Agreement, in which case, such exclusivity period shall terminate only in the case that it is finally determined in an arbitration pursuant to Article 16.1 that Licensee has failed to diligently pursue development of a Licensed Product.

11. CONSEQUENCES OF TERMINATION

11.1. Upon the termination of this Agreement under the provisions of Article 10 above, all rights and licenses granted in favour of the Licensee hereunder shall cease, except and to the extent expressly provided otherwise under the terms of this Agreement.

11.2. Immediately upon the termination of this Agreement all license payments accrued to date under Article 3.1 above shall become payable and all other obligations shall become due. In the event of termination of this Agreement under the provisions of Article 10 the Licensee shall have the right from the date of termination to dispose of all stocks of Licensed Products its possession and to fulfill any outstanding orders for the Licensed Products, subject in each case to the payment of royalties as payable under Article 3.1 hereof.

11.3. The expiry or termination of this Agreement shall be without prejudice to the provisions of Article 5 (Warranty and Liability) and this Article 11 (Consequences of Termination), to any other express obligations in his Agreement of a continuing nature, and to any rights of either Party which ay have accrued up to the date of termination.

12. **ASSIGNMENT BY THE LICENSOR**

12.1 Licensor may assign this Agreement or any of the Intellectual Property to any Third Party without the consent of the Licensee. Any such assignment made will preserve the rights of the Licensee set out in this Agreement.

13. **VALIDITY OF THE AGREEMENT**

13.1. In the event that any provisions of this Agreement shall for any reason be declared or rendered invalid, illegal or unenforceable in any respect, such provisions shall, to the extent of such invalidity, illegality or unenforceability, be deemed severable and shall not affect the validity, legality or enforceability of the remainder of this Agreement, which shall continue in full force and effect, save that if the nature of the invalidity, illegality or unenforceability is such that it destroys the business efficacy of this Agreement, the Parties shall confer to determine whether the Agreement shall be terminated or whether such severed provisions shall be replaced with enforceable provisions to the satisfaction of both of the Parties.

14. MISCELLANEOUS PROVISIONS

14.1. Each Party shall at any time on the request of the other do and execute all such acts, deeds, documents and things as may reasonably be required by the other to perfect and complete the grant of rights and licenses conferred by this Agreement on the other, or to record any change in the status of such rights, including, in particular, entry into forms of license or other instruments confirmatory of such rights for registration with appropriate authorities in any country.

14.2. No relaxation, forbearance, delay or indulgence by either party in enforcing any of the terms and conditions of this Agreement or the granting of time by either Party to the other shall prejudice, affect or restrict the rights and powers of that Party under this Agreement nor shall any waiver by either Party of any breach of this Agreement operate as a waiver of or in relation to any subsequent or any continuing breach of this Agreement.

14.3. No variation of this Agreement shall be effective unless it is in writing signed by a duly authorised officer of each Party.

14.4. Nothing in this Agreement shall be deemed to constitute a partnership between the Parties nor shall either Party be taken to have any authority to bind or commit the other or be taken to have authority to act as the agent of the other or in any other capacity other than as expressly authorised in this Agreement.

14.5. Any notice or communication authorised or required to be given hereunder or for the purpose hereof shall be deemed to be duly given if left or sent by post or if sent by cable, facsimile or telex so addressed if confirmed by post in like manner to the Licensor at:

Manager, Intellectual Property Group
Defence Science and Technology Laboratory,
[***]
[***]
[***]
[***]

[***]
[***]

the Licensee at:

PharmAthene UK LTD.
Attn: The President
Johnson Mathey Building
PO Box 88
Haverton Hill Road
Billingham, Cleveland TS23 1XN

and a copy to:

PharmAthene, Inc.
Attn: [***]
One Park Place, Suite 450
Annapolis, MD 21401

Any notice so given by post shall be deemed to be served at the expiration of seven (7) days after it has been posted and in proving such service it shall be sufficient to prove that the envelope containing the notice was properly addressed and posted.

14.6. A person who is not a party to this Agreement shall have no right under the Contracts (Rights of Third Parties) Act 1999 to enforce any term of this Agreement. This Article does not affect any right or remedy of any person which exists or is available otherwise than pursuant to that Act.

15. LAW AND JURISDICTION

15.1. This Agreement shall be considered as a contract made in England subject to English Law.

PRIVATE BETWEEN THE PARTIES

15.2. Subject to Article 15 and without prejudice to the dispute resolution process set out in that Article, each Party hereby irrevocably submits and agrees to the exclusive jurisdiction of the Courts of England to resolve, and the laws of England to govern, any actions, proceedings, controversy or claim of whatever nature arising out of or relating to this Agreement or breach thereof.

15.3. Other jurisdictions may apply solely for the purpose of giving effect to this Article and for the enforcement of any judgment, order or award given under English jurisdiction.

16. DISPUTE RESOLUTION

16.1. Without prejudice to the operation of the dispute resolution or arbitration provisions, if any, governing disputes, differences or questions arising out of the Development Contracts and where necessary the examination of this Agreement pursuant to such dispute resolution or arbitration provisions:

16.1.1. the parties will attempt in good faith to resolve any dispute or claim arising out of or relating to this Agreement through negotiations between the respective representatives of the parties having authority to settle the matter, which attempts may include the use of any Alternative Dispute Resolution (ADR) procedure on which the parties may agree;

16.1.2. in the event that the dispute or claim is not resolved by negotiation, or where the parties have agreed to use an ADR procedure, by the use of such procedure, the dispute shall be referred to arbitration;

16.1.3. the party initiating the arbitration shall give a written Notice of Arbitration to the other party, which Notice of Arbitration shall specifically state:

that the dispute is referred to arbitration; and

the particulars of this Agreement out of or in relation to which the dispute arises;

16.1.4. unless otherwise agreed in writing by the parties, the arbitration and this Article 14 shall be governed by the provisions of the Arbitration Act 1996 or any statutory modification or re-enactment thereof;

16.1.5. it is agreed between the Parties that for the purposes of the arbitration, the arbitrator shall have the power to make provisional awards as provided for in Section 39 of the Arbitration Act 1996; and

16.1.6. for the avoidance of doubt it is agreed between the Parties that the arbitration process and anything said, done or produced in or in relation to the arbitration process (including any awards) shall be confidential as between the Parties, except as may be lawfully required in judicial proceedings relating to the arbitration or otherwise; and no report relating to anything said, done or produced in or in relation to the arbitration process may be made beyond the tribunal, the Parties, their legal representatives and any person necessary to the conduct of the proceedings, without the concurrence of all the Parties to the arbitration.

PRIVATE BETWEEN THE PARTIES

17. COMPLETE AGREEMENT

This Agreement consisting of seventeen (17) Articles represents the entire agreement between the Parties on the subject of the use by the Licensee of the Patents and other Intellectual Property for the purposes set out herein and supersedes all prior proposals, oral or written, between the Parties on this subject.

PRIVATE BETWEEN THE PARTIES

IN WITNESS WHEREOF the Parties entered into this Agreement in two (2) counterparts, each of which is equally valid, the day and year first above written.

SIGNED on behalf of **THE SECRETARY OF STATE FOR DEFENCE** by:

[***]
[***]
[***]
[***]

in the presence of

(witness)

SIGNED for and on behalf of **PHARMATHENE UK LIMITED** by:

KEVIN PRICE
(President of PharmAthene UK LTD.)

in the presence of

(witness)

PRIVATE BETWEEN THE PARTIES

Schedule 1

[***]

[***]
[***]

[***]

[***]	[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]		
[***]	[***]	[***]	[***]		
[***]	[***]	[***]	[***]		
[***]	[***]	[***]	[***]		
[***]	[***]	[***]	[***]		
[***]	[***]	[***]	[***]		
[***]	[***]	[***]	[***]		
[***]	[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]		

[***]	[***]	[***]	[***]		
[***]	[***]	[***]	[***]	[***]	[***]

PharmAthene, Inc.
Confidential Materials Omitted and Filed Separately with the
Securities and Exchange Commission
Confidential Portions denoted by [***]

PRIVATE BETWEEN THE PARTIES

AMENDED AND RESTATED LICENCE AGREEMENT

between

THE SECRETARY OF STATE FOR DEFENCE

as represented by

THE DEFENCE SCIENCE AND TECHNOLOGY LABORATORY (Dstl)

and

PHARMATHENE UK LTD.

in respect of

RECOMBINANT [***] VACCINE

PRIVATE BETWEEN THE PARTIES

THIS AMENDED AND RESTATED AGREEMENT is made the 5th day of February, 2009

BETWEEN

THE SECRETARY OF STATE FOR DEFENCE acting through the Defence Science and Technology Laboratory **[***]** the **"Licensor")** of the one part

AND

PHARMATHENE UK LTD. Having an address at Johnson Mathey Building, PO Box 88, Haverton Hill Road, Billingham, Cleveland TS23 1XN (hereinafter referred to as the **"Licensee")** of the second part hereinafter referred to collectively as the **"Parties"** or in the singular as a **"Party".**

WHEREAS

A. Licensor and Avecia Limited entered into a Manufacturing License Agreement as of May , 2006, (the "License Agreement");

B. With the consent of Licensor, the License Agreement was assigned by Avecia Limited to Avecia Biologics Limited;

C. The License Agreement was amended by a Letter Agreement dated March 20, 2008 by and between Licensor and Avecia Biologics Limited (the "Amended Agreement");

D. With the consent of Licensor, Avecia Biologics Limited assigned the Amended Agreement to Licensee;

E. Licensor and Licensee desire to amend and restate the Amended Agreement.

NOW IT IS HEREBY AGREED BETWEEN THE PARTIES AS FOLLOWS:-

1. DEFINITIONS AND INTERPRETATION

1.1. For the purposes of this Agreement, unless the context clearly or necessarily indicates otherwise, the following words and phrases shall have the meanings set forth below:

1.1.1. **"Agreement"** shall mean this Amended and Restated Agreement.

PRIVATE BETWEEN THE PARTIES

1.1.2. **"Commencement Date"** shall mean the day and year first above written.

1.1.3. **"The Intellectual Property"** shall mean the Patents and know-how, technical information and materials (including but not limited to cell lines) owned by the Licensor necessary or useful to develop, manufacture, have manufactured, import use, keep, sell and offer to sell the [***] Vaccine.

1.1.4. **""Licensed Product"** shall mean a [***] Vaccine including but not limited to a [***] Vaccine Dose, the manufacture, use, sale, keeping, importing or exporting of which would, in the absence of the license granted under this Agreement, constitute an infringement of the Patents (for the avoidance of doubt, where the definition of Patents includes pending patent applications, this includes doing anything in respect of a claim in a pending patent application that had a patent been granted on such a claim would constitute infringement of that claim) or that uses other Intellectual Property.

1.1.5. **"Net Sales Price"** shall mean the actual sale price of Licensed Product invoiced by the Licensee or, where applicable, a Partner of the Licensee less any separate charges identified for packaging, transportation, insurance and sales taxes and (where applicable) any royalties paid to any Third Party in respect of the Licensed Product in question. If the Licensee sells or disposes of any Licensed Product on otherwise than an arms length transaction basis at the open full market price (eg to another company in the Licensee's group or under an off-set or barter agreement), the open market price shall be taken as the actual sales price.

1.1.6. **"Patents"** The patents and patent applications set out in Schedule 1 and any equivalents thereof, and any divisionals, continuations, continuations-in-part, re-filings or re-issues of any of the foregoing, and any other patent applications or patents that would be infringed by manufacture, use or sale of a [***] Vaccine or component thereof.

1.1.7. **"Partner"** shall mean any Third Party organisation which the Licensee elects to involve in the performance of a Supply Contract.

1.1.8. **"PIL"** shall mean [***], [***] UK.

1.1.9. **[***] [***]**

PRIVATE BETWEEN THE PARTIES

1.1.10. [***]

1.1.11. **"Process Validation Contract"** means the contract dated May 10, 2006 between Licensor and Avecia (Licensor reference [***]).

1.1.12. **"Process Validation Foreground IP"** means intellectual property developed under the Process Validation Contract that (i) relates solely to Vaccine [***] or (ii) relates to the process for the manufacture of the Vaccine [***].

1.1.13. **"Supply Contract"** shall mean a contract or contracts for the production and/or supply of Licensed Product.

1.1.14. **"Third Party"** shall mean any person other than the Government of the United Kingdom.

1.1.15. **"Vaccine"** means a [***] vaccine **[***]**.

1.2. The singular shall include the plural and vice versa, and the masculine shall include the feminine or the neuter gender and vice versa.

1.3. Unless the context otherwise indicates, references to Articles and Articles and Schedule, are to articles and Articles and the Schedule of this Agreement.

1.4. Headings to Articles in this Agreement are included for ease of reference only and shall not have any effect on the construction or the interpretation of this Agreement.

1.5. References in this Agreement to any statute or statutory provision shall include any statute or statutory provision which amends, extends, consolidates or replaces the same and shall include any orders, regulations, instruments or other subordinate legislation made under the relevant statute.

2. GRANT OF RIGHTS BY THE LICENSOR

2.1. In consideration for the payments to be made by the Licensee to the Licensor under the provisions of Article 3 below, the Licensor, warranting that he has the right to do so, hereby grants and the Licensee hereby accepts a nonexclusive worldwide licence to use the Intellectual Property to develop, make, or have made, use, keep, sell, offer to sell, import and export Licensed Products.

2.2. Without prejudice to the provisions of Articles 2.3, 2.4 and 10.3 below, the Licensor undertakes that it shall not whilst this licence remains in effect grant a licence to any third party for under the Intellectual Property to make, have made, use, keep, export, sell or offer to sell Licensed Products..

PRIVATE BETWEEN THE PARTIES

2.3. For the avoidance of any doubt, the Licensor and any other Department or Agency of the UK Government shall retain the right at any time to use, or authorise others to use the Licensed Products for any UK Government purpose or otherwise to the extent customary pursuant to standard UK Ministry of Defence contracting procedures, and to dispose of products made in consequence of such use but no longer required; and nothing in this Agreement shall be construed as in any way limiting or derogating from such retained rights, nor from any rights of the Crown arising under any other agreement or contract or provision of law.

2.4. The restrictions imposed by Article 2.2 above shall not prevent or restrict the use of any UK Government patent by or on behalf of the US Government where such use is under the "Agreement between the Government of the United Kingdom of Great Britain and Northern Ireland and the Government of the United States of America to facilitate the interchange of patents and technical information for defence purposes" done in London on 19th January 1953. Furthermore the restrictions imposed by Article 2.2 above shall not be deemed to prevent or hinder the UK

Government from authorising any foreign Government to use and have used the Intellectual Property where such use is in furtherance of any formal international co-operative arrangement.

2.5. Save as permitted under Article 2.6 below, the licence granted under this Agreement is personal to the Licensee and as such shall not be assigned, sub-licensed, mortgaged or in any way dealt with by the Licensee without the prior written consent of the Licensor, which consent shall not be unreasonably withheld, provided that the Licensee may assign the licence and this Agreement without consent in connection with a genuine business reorganisation or to any corporation, association or other business entity which directly or indirectly controls, is controlled by or is under common control with the Licensee. For the avoidance of doubt, consent shall be deemed to be reasonably withheld where the Chief Executive of Dstl receives written notice from an appropriate authority at the Ministry of Defence or other UK Government Department that assignment to such person would damage the essential public or national interest. Any assignment, sub-licensing or mortgaging of this Agreement by the Licensee, otherwise than as permitted by this Article 2.5, without the prior written consent of the Licensor shall immediately invalidate this Agreement and the licence granted hereunder.

2.6. Notwithstanding the provisions of Article 2.5 above, the Licensee shall be entitled to employ Partners to assist the Licensee in exercising the

---

Licensee's rights hereunder with respect to Licensed Products subject to the provisions of Article 3 below.

2.7. Save as expressly stated under this Article 2 the Licensee is not authorised hereunder to grant to any Third Party any sub-licence under the Patents or to pass to such Third Party any of the Intellectual Property.

2.8. Should the Licensor wish to abandon a patent, patent application or equivalent forming part of the Intellectual Property, it shall offer it to the Licensee, which shall be entitled to maintain in force the said patent, patent application or equivalent in the name of Licensor at the Licensee's expense but otherwise without charge and, the Licensee shall be responsible for all further expenditure thereon. The Licensee shall retain a royalty free non-exclusive license thereto pursuant to Section 2.1 that is subject to Licensor's obligations under Section 2.2.

2.9. At the request of Licensee, Licensor shall reasonably consider expanding the license granted under Section 2.1 by amending the definition [***] at no additional cost to Licensee.

3. LICENCE PAYMENTS

3.1 In consideration for the grant of rights by the Licensor in Article 2 above, the Licensee shall pay to the Licensor a royalty on each and every **[***]** Vaccine Dose, equal to the greater of:

3.1.1 [***] of the Net Sales Price of Licensed Product;

3.1.2 [***] of the Net Sales Price of any Licensed Product where such sale is to a Third Party and when Process Validation Foreground IP has been used in the process for production of such Licensed Product; or

3.1.3 [***].

Notwithstanding the foregoing, no royalties shall be payable in respect of any samples of Licensed Product which are provided by Licensee for clinical, product development, marketing development or bona fide study purposes.

3.2 Payment of the royalty as set out in Clause 3.1 discharges all obligations of the Licensee to pay any levies in respect of the support given by the Licensor and the US and Canadian Governments pursuant to the Process Validation Contract and, for the avoidance of doubt,

---

upon execution of this Agreement by the Licensor and the Licensee, clause 6.10 of the Process Validation Contract shall no longer apply.

3.3 If the UK Ministry of Defence, US Department of Defense or the Department of Defense of the Government of Canada claims that Licensed Products should be supplied free of royalties or at a reduced royalty rate under an existing international agreement or arrangement mentioned in Artciles 2.3 or 2.4 and seeks a waiver of any part of the royalty attributable to Patents set out in Schedule 1, the Licensee shall inform the Licensor. If it is agreed by the Licensor that such supply should be free of patent royalties or at an appropriately reduced royalty, then the Licensor shall inform the Licensee of the royalty (if any) that the Licensor will apply to the supply of Licensed Products concerned. In such a case the notified royalty (if any) shall be substituted for the royalty mentioned Article 3.1 in respect of the relevant supply of Licensed Products.

3.4 The royalty in respect of a Licensed Product shall become payable by the Licensee under this Agreement when the cost of the Licensed Product is invoiced by Licensee. Where the cost of a Licensed Product is payable in two or more installments, the invoice for each installment will be considered separately for the payment of royalties. If no invoice is issued, royalty will become due on delivery of the Licensed Product concerned.

3.5 The Licensee shall reimburse Licensor for the cost and expense incurred by Licensor after the date of this Agreement for prosecuting and maintaining Patents licensed to Licensee under this Agreement.

3.6 The payments due under Articles 3.1 and 3.5 of this Agreement will fall due half-yearly on 30 June and 31 December and will be payable in accordance with the instructions contained in Articles 3.7 and 3.8 below.

3.7 The Licensor has appointed PIL as its agent to act on its behalf for the administration of royalties and other moneys due under this Agreement.

3.8 Within (60) days of the end of each half-year period as mentioned in Article 3.5 hereof, the Licensee shall send to PIL (or as otherwise advised) a true and complete statement in writing, including where appropriate a Zero return, of the number of Licensed Products manufactured and sold by or for Licensee during the relevant period, the Net Sales Price derived from sales of such Licensed Products, and the royalty calculated to be payable in respect thereof in accordance with the provisions of Article 3.1.

PRIVATE BETWEEN THE PARTIES

3.9 All payments due to the Licensor under this Agreement shall be made by the end of the month following the month of the date of receipt of an invoice from PIL and in accordance with the instructions issued with the relevant invoice. All royalty statements, correspondence and payments to PIL under the provisions of this Article 3 shall quote the PIL reference [***].

3.10 All payments due to PIL shall be paid in pounds Sterling plus, if applicable, VAT at the UK rate prevailing at the time of payment. Where a payment due is in a currency other than pounds Sterling, the rate of exchange to be applied shall be the rate of exchange applied by the Bank of England on the date of the relevant invoice for Licensed Product(s) supplied by the Licensee.

3.11 Without prejudice to the provisions of Article 10.2, if the Licensee fails to make any payment to the Licensor within the time specified in this Agreement, then the Licensee shall be liable to pay interest on the outstanding payment calculated at [***] per annum with effect from the date on which the payment originally fell due, where **[***]**.

3.12 Subject to the provisions of Article 3.13 below, the Licensee shall keep at its usual place of business proper records and books of account showing the quantities and Net Sales Price of all Licensed Products supplied by the Licensee and its Partners under this Agreement and such records and books shall be kept separate from any records and books not relating solely to the Licensed Products. Such records and books of account shall contain such true entries (complete in every particular) as may be necessary or proper for enabling the amount of the payments due to the Licensor under this Agreement to be ascertained. The Licensor or PIL by giving no less than ten (10) working days notice shall be entitled to inspect such records and books. The Licensee shall, and shall ensure that its Partners shall, make the appropriate records and books of account available to inspection at all times during office hours by the Licensor or PIL or their duly authorised agent or representative who shall be entitled to take copies of or extracts from the same. In addition to the foregoing, the Licensee shall also provide the Licensor or PIL or their duly authorised agent or representative with any other information which may be necessary or appropriate with a view to determining or verifying the royalties due under this Agreement. In the event that such inspection or audit should reveal an underreporting in the royalties payable under this Agreement, the Licensee shall make up any shortfall within thirty (30) days of written notification and, in the event that the said shortfall is more than [***], shall reimburse the Licensor or PIL in respect of any professional charges incurred for such audit or inspection.

PRIVATE BETWEEN THE PARTIES

3.13 The books of account referred to in Article 3.12 above shall be kept for a minimum of six years after any relevant transaction and thereafter in accordance with applicable commercial law.

3.14 In accordance with the provisions of Article 11 (Consequences of Termination), the provisions of this Article 3 shall continue to apply notwithstanding termination or expiry of this Agreement until all royalties properly owed by the Licensee to the Licensor in accordance with this Article 3 have been paid to the Licensor.

3.15 In the event that any of the patents, patent applications or equivalents listed in the Schedule expire or are abandoned or revoked, or are reduced in scope such that operation within the scope of a patent claim to manufacture or sell Licensed Products is no longer necessary, but it remains necessary for the Licensee to use some or all of the other Intellectual Property in order to fulfill an extant order for the Licensed Products, then the Licensee shall have the right to request a meeting of the parties at which the parties shall negotiate in good faith with a view to agreeing upon an appropriate reduction to the royalty payable under this Agreement.

3.16 The Licensor may himself at any time, terminate the arrangements with PIL by notice in writing to the Licensor and in which case “the Licensor” will be substituted for PIL in this Artcile 3.

4. OWNERSHIP, AND PROTECTION, OF INTELLECTUAL PROPERTY

4.1. Both of the Parties acknowledge that nothing contained in this Agreement shall affect the ownership of any intellectual property existing at the Commencement Date and which is owned by either of the Parties.

4.2. Both the Parties acknowledge that nothing contained in this Agreement shall affect the arrangements for the protection of information which are contained in the Contracts.

4.3. The Licensee shall promptly and fully notify the Licensor in writing of:

4.3.1. any actual, threatened or suspected infringement by any Third Party of the patents listed in Schedule 1 or, if granted, any patent that might be granted pursuant to a patent application listed in Schedule 1

4.3.2. any proceedings commenced or threatened against the Licensee in which it is alleged that any patent listed in Schedule 1 is invalid and/or its use would infringe Third Party rights, or that use of any of the know how or

---

information, or material contained in any patent application listed in Schedule 1 would infringe Third Party rights;

4.3.3. that comes to the notice of the Licensee during the term of this Agreement.

4.4. In the event that the Licensor decides (in the circumstances referred to in Article 4.3.1 above) to institute any proceedings or (in the circumstances referred to in Article 4.3.2 above) to defend any proceedings instituted against the Licensee with respect to the validity of a patent listed in Schedule 1, the Licensee shall render to the Licensor at the Licensor's expense such reasonable assistance in connection with such proceedings as the Licensor may request. For the avoidance of doubt, Licensee rather than Licensor shall have the sole right to defend any proceeding against Licensee as to infringement of Third Party rights.

4.5. Nothing herein shall oblige the Licensor to institute proceedings in the circumstances referred to in Artcile 4.3.1 above, or to defend any proceedings in the circumstances referred to in Artcile 4.3.2 above with respect to the validity of a patent listed in Schedule 1. In the event that the Licensor decides not to institute proceedings in the circumstances referred to in Article 4.3.1 or defend any proceedings in the circumstances of Article 4.3.2 above with respect to the validity of a patent listed in Schedule 1, the Licensor will allow the Licensee, if necessary in the Licensor's name, to institute or defend such proceedings at its own expense, in which event:

4.5.1. the Licensee shall have sole control of the proceedings and shall take or conduct such action in its discretion in any way that it deems necessary or appropriate; and

4.5.2. the Licensor shall render to the Licensee at the Licensee's expense such reasonable assistance (including performing such acts and executing such documents) in connection with such proceedings, as the Licensee may request; and

4.5.3. the Licensee shall be responsible for all costs and expenses arising therefrom and shall be solely responsible for any damages payable to the third party and for satisfying any award or judgment in favour of any third party and shall be solely entitled to the full benefit of all remedies awarded including but not limited to all damages and other sums which may be paid or awarded as a result thereof, except that in the event that Licensee recovers damages in such an action, then Licensee shall pay Licensor the lower of (i) [***].

---

5. WARRANTY AND LIABILITY

5.1. Nothing contained in this Agreement or in any licence granted hereunder shall be construed as or deemed to be:-

5.1.1. a representation or warranty that use of any the Patents will not infringe any intellectual property rights owned by a Third Party anywhere in the world; or

5.1.2. an indemnity against costs, damages, royalties, liabilities, expenses or other payments arising out of any proceedings based on infringement brought against the Licensee or customers, agents or distributors of the Licensee; and any such representation, warranty or indemnity is hereby expressly excluded.

5.2. The Licensee shall at all times indemnify and keep indemnified the Licensor against all costs, claims, damages or expenses incurred by the Licensor for which the Licensor may become liable with respect to any product liability claim relating to any products supplied or put into use by the Licensee pursuant to this Agreement. The Licensee shall maintain sufficient product liability insurance coverage to cover its commitments under this Agreement.

5.3. The Licensor shall not be liable for any loss or damage howsoever caused which results from the Licensee's use of the Patents in exercise of the Licensee's rights under this Agreement and the Licensor gives no warranty that anything contained in the Patents, any know-how or information is suitable for any purpose.

6. TAXATION

6.1. If any stamp taxes, registration taxes, turnover taxes, or other taxes, duties or governmental charges are levied on this Agreement by reason of its execution or performance, it shall be the responsibility of the Licensee to pay all such taxes and charges when due.

6.2. The Licensee agrees to release and indemnify the Licensor from and against any liability of whatever nature arising out of the Licensee's failure duly and timely to pay and discharge any of the above-mentioned taxes.

7. DISCLOSURES OF INFORMATION

7.1. Each Party will keep all know-how and other information belonging to the other Party confidential and will not disclose it to any Third Party.

Except either Party shall have the right to disclose information and know-how of the other Party where such Party engages a Third Party, including an agent (such as PIL) to undertake anything in connection with this Agreement, or in connection with a proposed or permitted assignment of or sublicense under this Agreement, provided that the disclosing Party shall procure that the Third Party is bound likewise to

confidentiality obligations and any breaches of the confidentiality obligations by such Third Party shall be treated as a breach of this Agreement by the Party. In addition, the Licensee shall have the right to disclose information, know-how and materials of Licensor in connection with obtaining regulatory approval of a Licensed Product. This restriction does not apply to disclosures made in accordance with Article 7.2 below, or to:

7.1.1. Any information which is or comes into the public domain otherwise than through breach of this Agreement;

7.1.2. Any information already known, at the time of its disclosure, by the recipient;

7.1.3. Any information received from a Third Party which has the right to disclose the same;

7.1.4. Any information that it is necessary to impart to customers of the recombinant protective antigen Licensed Products to ensure its safe and effective use.

7.1.5. Any information required to be disclosed in accordance with an applicable law, rule or regulation or pursuant to a court order or legal proceeding, provided that the disclosing Party takes reasonable available steps to protect the confidentiality thereof.

7.2. The Licensor permits the Licensee to disclose any know-how and information owned or controlled by the Licensor and in the possession of the Licensee as necessary or useful to secure from any government or government agency contracts for the further development, manufacture and supply of Licensed Products.

8. EXPORT CONTROL

8.1. The Licensee shall be responsible for complying with the applicable Export of Goods (Control) Order.

8.2. This Agreement does not grant authority for the Licensee to export from the United Kingdom, any Licensed Product, or any information relating thereto without any necessary licence under any applicable Export of Goods (Control) Order. Any necessary export licence must

---

be made to the Export Licensing Unit of the Department of Trade and Industry.

9. COMING INTO EFFECT AND DURATION

9.1. This Agreement shall come into effect on the Commencement Date and, unless terminated in accordance with the provisions of Article 10, shall remain in effect indefinitely.

10. TERMINATION

10.1. The Licensor shall have the right to terminate this Agreement at any time forthwith by notice in writing to the Licensee on the happening of any of the following events:

10.1.1. if the Licensee is in breach of any of its obligations under this Agreement, and fails to remedy such breach or fails to take steps to substantially remedy the breach within thirty (30) days of a written notice issued to it by the Licensor to do so; or

10.1.2. if the Licensee shall have a Receiver or Liquidator appointed to the whole or any part of its assets or if an Order shall be made or any resolution passed for winding up the Licensee unless such Order or resolution is part of a scheme for amalgamation or reconstruction of the Licensee; or

10.1.3. if the Licensee assigns, sub-licences, mortgages, or in any other way deals with the licence granted under this Agreement without the prior written consent of the Licensor; or

10.1.4. if a person, whether alone or in conjunction with any Connected Person (as defined in section 839 of the Taxes Act 1998) acquires control of the Licensee and the Chief Executive of Dstl receives notice from an appropriate authority at the Ministry of Defence or other UK Government Department that such an acquisition would damage the essential public or national interest, where control of the Licensee means the power of a person to secure either by means of the holding of share or possession of voting power in or in relation to the Licensee or by virtue of any powers conferred by articles of association or other document regulating the Licensee that

---

its affairs are conducted in accordance with the wishes of that person; or

10.1.5. in any other event expressly identified in this Agreement as giving the Licensor a right to terminate.

10.2. The Licensee shall have the right to terminate this Agreement at any time on giving three (3) months prior written notice to the Licensor.

10.3. In the event that Licensee fails to diligently pursue development of a Licensed Product, Licensor shall have the right to notify Licensee in writing of such failure and the specifics thereof and that Licensor intends to terminate the exclusivity of Article 2.2 of this Agreement. Such exclusivity shall terminate thirty (30) days after receipt of such written notice unless prior to the expiration of such thirty (30) days period,

Licensee notifies Licensor in writing that such issue is being submitted for resolution pursuant to Article 16.1 of this Agreement, in which case, such exclusivity period shall terminate only in the case that it is finally determined in an arbitration pursuant to Article 16.1 that Licensee has failed to diligently pursue development of a Licensed Product.

11. CONSEQUENCES OF TERMINATION

11.1. Upon the termination of this Agreement under the provisions of Article 10 above, all rights and licences granted in favour of the Licensee hereunder shall cease, except and to the extent expressly provided otherwise under the terms of this Agreement.

11.2. Immediately upon the termination of this Agreement all licence payments accrued to date under Article 3.1 above shall become payable and all other obligations shall become due. In the event of termination of this Agreement under the provisions of Article 10 the Licensee shall have the right from the date of termination to dispose of all stocks of Licensed Products its possession and to fulfill any outstanding orders for the Licensed Products, subject in each case to the payment of royalties as payable under Article 3.1 hereof.

11.3. The expiry or termination of this Agreement shall be without prejudice to the provisions of Article 5 (Warranty and Liability) and this Article 11 (Consequences of Termination), to any other express obligations in his Agreement of a continuing nature, and to any rights of either Party which ay have accrued up to the date of termination.

PRIVATE BETWEEN THE PARTIES

12. **ASSIGNMENT BY THE LICENSOR**

12.1 Licensor may assign this Agreement or any of the Intellectual Property to any Third Party without the consent of the Licensee. Any such assignment made will preserve the rights of the Licensee set out in this Agreement.

13. **VALIDITY OF THE AGREEMENT**

13.1. In the event that any provisions of this Agreement shall for any reason be declared or rendered invalid, illegal or unenforceable in any respect, such provisions shall, to the extent of such invalidity, illegality or unenforceability, be deemed severable and shall not affect the validity, legality or enforceability of the remainder of this Agreement, which shall continue in full force and effect, save that if the nature of the invalidity, illegality or unenforceability is such that it destroys the business efficacy of this Agreement, the Parties shall confer to determine whether the Agreement shall be terminated or whether such severed provisions shall be replaced with enforceable provisions to the satisfaction of both of the Parties.

14. MISCELLANEOUS PROVISIONS

14.1. Each Party shall at any time on the request of the other do and execute all such acts, deeds, documents and things as may reasonably be required by the other to perfect and complete the grant of rights and licences conferred by this Agreement on the other, or to record any change in the status of such rights, including, in particular, entry into forms of licence or other instruments confirmatory of such rights for registration with appropriate authorities in any country.

14.2. No relaxation, forbearance, delay or indulgence by either party in enforcing any of the terms and conditions of this Agreement or the granting of time by either Party to the other shall prejudice, affect or restrict the rights and powers of that Party under this Agreement nor shall any waiver by either Party of any breach of this Agreement operate as a waiver of or in relation to any subsequent or any continuing breach of this Agreement.

14.3. No variation of this Agreement shall be effective unless it is in writing signed by a duly authorised officer of each Party.

14.4. Nothing in this Agreement shall be deemed to constitute a partnership between the Parties nor shall either Party be taken to have any authority to bind or commit the other or be taken to have authority to act as the agent of the other or in any other capacity other than as expressly authorised in this Agreement.

PRIVATE BETWEEN THE PARTIES

14.5. Any notice or communication authorised or required to be given hereunder or for the purpose hereof shall be deemed to be duly given if left or sent by post or if sent by cable, facsimile or telex so addressed if confirmed by post in like manner to:- the Licensor at:

[***]
[***]
[***]
[***]
[***]
[***]

[***]
[***]

the Licensee at:

PharmAthene UK LTD.

Attn: The President
Johnson Mathey Building
PO Box 88
Haverton Hill Road
Billingham, Cleveland TS23 1XN

and a copy to:

PharmAthene, Inc.
Attn: [***]
One Park Place, Suite 450
Annapolis, MD 21401

Any notice so given by post shall be deemed to be served at the expiration of seven (7) days after it has been posted and in proving such service it shaII be sufficient to prove that the envelope containing the notice was properly addressed and posted.

14.6. A person who is not a party to this Agreement shall have no right under the Contracts (Rights of Third Parties) Act 1999 to enforce any term of this Agreement. This Article does not affect any right or remedy of any person which exists or is available otherwise than pursuant to that Act.

PRIVATE BETWEEN THE PARTIES

15. LAW AND JURISDICTION

15.1. This Agreement shall be considered as a contract made in England subject to English Law.

15.2. Subject to Article 15 and without prejudice to the dispute resolution process set out in that Article, each Party hereby irrevocably submits and agrees to the exclusive jurisdiction of the Courts of England to resolve, and the laws of England to govern, any actions, proceedings, controversy or claim of whatever nature arising out of or relating to this Agreement or breach thereof.

15.3. Other jurisdictions may apply solely for the purpose of giving effect to this Article and for the enforcement of any judgment, order or award given under English jurisdiction.

16. DISPUTE RESOLUTION

16.1. Without prejudice to the operation of the dispute resolution or arbitration provisions, if any, governing disputes, differences or questions arising out of the Development Contracts and where necessary the examination of this Agreement pursuant to such dispute resolution or arbitration provisions:

16.1.1. the parties will attempt in good faith to resolve any dispute or claim arising out of or relating to this Agreement through negotiations between the respective representatives of the parties having authority to settle the matter, which attempts may include the use of any Alternative Dispute Resolution (ADR) procedure on which the parties may agree;

16.1.2. in the event that the dispute or claim is not resolved by negotiation, or where the parties have agreed to use an ADR procedure, by the use of such procedure, the dispute shall be referred to arbitration;

16.1.3. the party initiating the arbitration shall give a written Notice of Arbitration to the other party, which Notice of Arbitration shall specifically state:

that the dispute is referred to arbitration; and

the particulars of this Agreement out of or in relation to which the dispute arises;

16.1.4. unless otherwise agreed in writing by the parties, the arbitration and this Article 14 shall be governed by the provisions of the Arbitration Act 1996 or any statutory modification or re-enactment thereof;

PRIVATE BETWEEN THE PARTIES

16.1.5. it is agreed between the Parties that for the purposes of the arbitration, the arbitrator shall have the power to make provisional awards as provided for in Section 39 of the Arbitration Act 1996; and

16.1.6. for the avoidance of doubt it is agreed between the Parties that the arbitration process and anything said, done or produced in or in relation to the arbitration process (including any awards) shall be confidential as between the Parties, except as may be lawfully required in judicial proceedings relating to the arbitration or otherwise; and no report relating to anything said, done or produced in or in relation to the arbitration process may be made beyond the tribunal, the Parties, their legal representatives and any person necessary to the conduct of the proceedings, without the concurrence of all the Parties to the arbitration.

17. COMPLETE AGREEMENT

This Agreement consisting of seventeen (17) Articles represents the entire agreement between the Parties on the subject of the use by the Licensee of the Patents and other Intellectual Property for the purposes set out herein and supersedes all prior proposals, oral or written, between the Parties on this

subject.

PRIVATE BETWEEN THE PARTIES

IN WITNESS WHEREOF the Parties entered into this Agreement in two (2) counterparts, each of which is equally valid, the day and year first above written.

SIGNED on behalf of **THE SECRETARY OF STATE FOR DEFENCE** by:

[***]
[***]
[***]
[***]

in the presence of

(witness)

SIGNED for and on behalf of **PHARMATHENE UK LTD.** by**:**

[***]
(President of PharmAthene UK LTD.)

in the presence of

(witness)

PRIVATE BETWEEN THE PARTIES

The Schedule 1

[***]

[***]

[***]
[***]
[***]
[***]

[***]

[***]
[***]
[***]

[***]

[***]

[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]

[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]

PRIVATE BETWEEN THE PARTIES

· [***]
[***]

PRIVATE BETWEEN THE PARTIES

[***]

[***]

[***]
[***]
[***]

[***]

[***]

[***]

[***]

[***]	**[***]**	**[***]**	**[***]**	**[***]**
[***]	**[***]**	**[***]**	**[***]**	**[***]**
[***]	**[***]**	**[***]**	**[***]**	**[***]**
[***]	**[***]**	**[***]**	**[***]**	**[***]**
[***]	**[***]**	**[***]**	**[***]**	**[***]**
[***]	**[***]**	**[***]**	**[***]**	**[***]**
[***]	**[***]**	**[***]**	**[***]**	**[***]**

***[***]**

#360826 v2 - DSTL amended and restated
(was 346763 v4)

Exhibit 31.1

Certification of Principal Executive Officer
Pursuant to SEC Rule 13a-14(a)/15d-14(a)

I, David P. Wright, certify that:

1. I have reviewed this Form 10-Q of PharmAthene, Inc. for the quarter ended March 31, 2009;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statement for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

---

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: May 15, 2009

/s/ David P. Wright
Name: **David P. Wright**
Title: **Chief Executive Officer**

Exhibit 31.2

Certification of Principal Financial Officer
Pursuant to SEC Rule 13a-14(a)/15d-14(a)

I, Christopher C. Camut certify that:

1. I have reviewed this Form 10-Q of PharmAthene, Inc. for the quarter ended March 31, 2009;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statement for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

---

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: May 15, 2009

/s/ Christopher C. Camut
Name: **Christopher C. Camut**
Title: **Chief Financial Officer**

Exhibit 32.1

Certification Pursuant to Section 1350 of Chapter 63
of Title 18 of the United States Code

In connection with the Quarterly Report of PharmAthene, Inc. (the "Company") on Form 10-Q for the quarter ended March 31, 2009, as filed with the Securities and Exchange Commission (the "Report"), I, David P. Wright, Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to the best of my knowledge:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange

2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ David P. Wright

David P. Wright
Chief Executive Officer
May 15, 2009

Exhibit 32.2

Certification Pursuant to Section 1350 of Chapter 63
of Title 18 of the United States Code

In connection with the Quarterly Report of PharmAthene, Inc. (the "Company") on Form 10-Q for the quarter ended March 31, 2009, as filed with the Securities and Exchange Commission (the "Report"), I, Christopher C. Camut, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to the best of my knowledge:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act

2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Christopher C. Camut

Christopher C. Camut
Chief Financial Officer
May 15, 2009