

**SECURITIES AND EXCHANGE COMMISSION**  
**Washington, D.C. 20549**

**SCHEDULE 13D**  
**(Rule 13d-101)**

**INFORMATION TO BE INCLUDED IN STATEMENTS FILED PURSUANT  
TO RULE 13d-1(a) AND AMENDMENTS THERETO FILED  
PURSUANT TO RULE 13d-2(a)**

**(Amendment No. 1 )\***

**PHARMATHENE, INC.**

(Name of Issuer)

**Common Stock, par value \$0.0001 per share**

(Title of Class of Securities)

**42224H104**

(CUSIP Number)

MPM Asset Management  
The John Hancock Tower  
200 Clarendon Street, 54<sup>th</sup> Floor  
Boston, Massachusetts 02116  
(617) 425-9200  
ATTN: Luke Evnin

(Name, Address and Telephone Number of Person Authorized to Receive Notices and Communications)

**July 28, 2009**

(Dates of Event which Require Filing of this Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition which is the subject of this Schedule 13D, and is filing this schedule because of Rule 13d-1(e), 13d-1(f) or 13d-1(g), check the following box o.

**Note:** Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See §240.13d-7 for other parties to whom copies are to be sent.

\* The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter disclosures provided in a prior cover page.

The information required on the remainder of this cover page shall not be deemed "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act by shall be subject to all other provisions of the Act (however, see the Notes).

CUSIP No. 42224H104

<b>1</b>	NAME OF REPORTING PERSONS  I.R.S. Identification No(s). of above person(s) (entities only) MPM BioVentures III, L.P.	
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)  (a) <input type="radio"/> (b) <input checked="" type="checkbox"/> (1)	
<b>3</b>	SEC USE ONLY	
<b>4</b>	SOURCE OF FUNDS (SEE INSTRUCTIONS)  WC	
<b>5</b>	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e)  <input type="radio"/>	
<b>6</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	<b>7</b>	SOLE VOTING POWER  314,592 (2)
	<b>8</b>	SHARED VOTING POWER  0
	<b>9</b>	SOLE DISPOSITIVE POWER  314,529 (2)
	<b>10</b>	SHARED DISPOSITIVE POWER  0
<b>11</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  314,529 (2)	
<b>12</b>	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)  <input type="radio"/>	
<b>13</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)  1.1%(3)	
<b>14</b>	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)  PN	

(1) This Schedule is filed by MPM BioVentures III, L.P., MPM BioVentures III-QP, L.P., MPM BioVentures III GmbH & Co. Beteiligungs KG, MPM BioVentures III Parallel Fund, L.P., MPM BioVentures III GP, L.P., MPM BioVentures III LLC, and MPM Asset Management Investors 2004 BVIII LLC (collectively, the "MPM Entities") and Luke Evnin, Ansbert Gadicke, Nicholas Galakatos, Dennis Henner, Nicholas Simon III, Michael Steinmetz and Kurt Wheeler (collectively, the "Listed Persons" and together with the MPM Entities, the "Reporting Persons"). The Reporting Persons expressly disclaim status as a "group" for purposes of this Schedule 13D/A.

(2) Consists of 194,605 shares of common stock of the Issuer and 119,987 shares of common stock of the Issuer that may be acquired upon conversion of the New Notes (as defined in Item 3 hereof) within 60 days of this report.

(3) This percentage is calculated based upon 28,433,503 shares of the Issuer's common stock outstanding on June 24, 2009, as reported in the Issuer's preliminary proxy statement filed with the Securities and Exchange Commission in connection with its 2009 Annual Meeting of Stockholders.

CUSIP No. 42224H104

<b>1</b>	NAME OF REPORTING PERSONS  I.R.S. Identification No(s). of above person(s) (entities only) MPM BioVentures III-QP, L.P.	
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)  (a) <input type="radio"/> (b) <input checked="" type="checkbox"/> (1)	
<b>3</b>	SEC USE ONLY	
<b>4</b>	SOURCE OF FUNDS (SEE INSTRUCTIONS)  WC	
<b>5</b>	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e)  <input type="radio"/>	
<b>6</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	<b>7</b>	SOLE VOTING POWER  4,678,423 (2)
	<b>8</b>	SHARED VOTING POWER  0
	<b>9</b>	SOLE DISPOSITIVE POWER  4,678,423 (2)
	<b>10</b>	SHARED DISPOSITIVE POWER  0
<b>11</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  4,678,423 (2)	
<b>12</b>	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)  <input type="radio"/>	
<b>13</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)  15.5%(3)	
<b>14</b>	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)  PN	

(1) This Schedule is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a “group” for purposes of this Schedule 13D/A.

(2) Consists of 2,894,054 shares of common stock of the Issuer and 1,784,369 shares of common stock of the Issuer that may be acquired upon conversion of the New Notes (as defined in Item 3 hereof) within 60 days of this report.

(3) This percentage is calculated based upon 28,433,503 shares of the Issuer’s common stock outstanding on June 24, 2009, as reported in the Issuer’s preliminary proxy statement filed with the Securities and Exchange Commission in connection with its 2009 Annual Meeting of Stockholders.

CUSIP No. 42224H104

<b>1</b>	NAME OF REPORTING PERSONS  I.R.S. Identification No(s). of above person(s) (entities only) MPM BioVentures III GmbH & Co. Beteiligungs KG	
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)  (a) <input type="radio"/> (b) <input checked="" type="checkbox"/> (1)	
<b>3</b>	SEC USE ONLY	
<b>4</b>	SOURCE OF FUNDS (SEE INSTRUCTIONS)  WC	
<b>5</b>	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e)  <input type="radio"/>	
<b>6</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  Germany	
NUMBER OF SHARES BENEFICIALLY OWNED BY  EACH REPORTING PERSON  WITH:	<b>7</b>	SOLE VOTING POWER  395,370 (2)
	<b>8</b>	SHARED VOTING POWER  0
	<b>9</b>	SOLE DISPOSITIVE POWER  395,370 (2)
	<b>10</b>	SHARED DISPOSITIVE POWER  0
<b>11</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  395,370 (2)	
<b>12</b>	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)  <input type="radio"/>	
<b>13</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)  1.4%(3)	
<b>14</b>	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)  PN	

(1) This Schedule is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a "group" for purposes of this Schedule 13D/A.

(2) Consists of 244,574 shares of common stock of the Issuer and 150,796 shares of common stock of the Issuer that may be acquired upon conversion of the New Notes (as defined in Item 3 hereof) within 60 days of this report.

(3) This percentage is calculated based upon 28,433,503 shares of the Issuer's common stock outstanding on June 24, 2009, as reported in the Issuer's preliminary proxy statement filed with the Securities and Exchange Commission in connection with its 2009 Annual Meeting of Stockholders.

CUSIP No. 42224H104

<b>1</b>	NAME OF REPORTING PERSONS  I.R.S. Identification No(s). of above person(s) (entities only) MPM BioVentures III Parallel Fund, L.P.	
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)  (a) <input type="radio"/> (b) <input checked="" type="checkbox"/> (1)	
<b>3</b>	SEC USE ONLY	
<b>4</b>	SOURCE OF FUNDS (SEE INSTRUCTIONS)  WC	
<b>5</b>	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e)  <input type="radio"/>	
<b>6</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	<b>7</b>	SOLE VOTING POWER  141,303 (2)
	<b>8</b>	SHARED VOTING POWER  0
	<b>9</b>	SOLE DISPOSITIVE POWER  141,303 (2)
	<b>10</b>	SHARED DISPOSITIVE POWER  0
<b>11</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  141,303 (2)	
<b>12</b>	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)  <input type="radio"/>	
<b>13</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)  0.5%(3)	
<b>14</b>	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)  PN	

(1) This Schedule is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a "group" for purposes of this Schedule 13D/A.

(2) Consists of 87,409 shares of common stock of the Issuer and 53,894 shares of common stock of the Issuer that may be acquired upon conversion of the New Notes (as defined in Item 3 hereof) within 60 days of this report.

(3) This percentage is calculated based upon 28,433,503 shares of the Issuer's common stock outstanding on June 24, 2009, as reported in the Issuer's preliminary proxy statement filed with the Securities and Exchange Commission in connection with its 2009 Annual Meeting of Stockholders.

CUSIP No. 42224H104

<b>1</b>	NAME OF REPORTING PERSONS  I.R.S. Identification No(s). of above person(s) (entities only) MPM Asset Management Investors 2004 BVIII LLC	
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)  (a) <input type="radio"/> (b) <input checked="" type="checkbox"/> (1)	
<b>3</b>	SEC USE ONLY	
<b>4</b>	SOURCE OF FUNDS (SEE INSTRUCTIONS)  WC	
<b>5</b>	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e)  <input type="radio"/>	
<b>6</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	<b>7</b>	SOLE VOTING POWER  111,221 (2)
	<b>8</b>	SHARED VOTING POWER  0
	<b>9</b>	SOLE DISPOSITIVE POWER  111,221 (2)
	<b>10</b>	SHARED DISPOSITIVE POWER  0
<b>11</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  111,221 (2)	
<b>12</b>	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)  <input type="radio"/>	
<b>13</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)  0.4%(3)	
<b>14</b>	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)  OO	

(1) This Schedule is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a "group" for purposes of this Schedule 13D/A.

(2) Consists of 68,801 shares of common stock of the Issuer and 42,420 shares of common stock of the Issuer that may be acquired upon conversion of the New Notes (as defined in Item 3 hereof) within 60 days of this report.

(3) This percentage is calculated based upon 28,433,503 shares of the Issuer's common stock outstanding on June 24, 2009, as reported in the Issuer's preliminary proxy statement filed with the Securities and Exchange Commission in connection with its 2009 Annual Meeting of Stockholders.

CUSIP No. 42224H104

<b>1</b>	NAME OF REPORTING PERSONS  I.R.S. Identification No(s). of above person(s) (entities only) MPM BioVentures III GP, L.P.	
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)  (a) <input type="radio"/> (b) <input checked="" type="checkbox"/> (1)	
<b>3</b>	SEC USE ONLY	
<b>4</b>	SOURCE OF FUNDS (SEE INSTRUCTIONS)  WC	
<b>5</b>	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e)  <input type="radio"/>	
<b>6</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  Germany	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	<b>7</b>	SOLE VOTING POWER  0
	<b>8</b>	SHARED VOTING POWER  5,529,688 (2)
	<b>9</b>	SOLE DISPOSITIVE POWER  0
	<b>10</b>	SHARED DISPOSITIVE POWER  5,529,688 (2)
<b>11</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  5,529,688 (2)	
<b>12</b>	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)  <input type="radio"/>	
<b>13</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)  18.1%(3)	
<b>14</b>	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)  PN	

- (1) This Schedule is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a “group” for purposes of this Schedule 13D/A.
- (2) Includes the following shares of common stock of the Issuer: 194,605 shares held by MPM BioVentures III, L.P., 2,894,054 shares held by MPM BioVentures III-QP, L.P., 244,574 shares held by MPM BioVentures III GmbH & Co. Beteiligungs KG, and 87,409 shares held by MPM BioVentures III Parallel Fund, L.P. Also includes the following shares of common stock of the Issuer that may be acquired upon conversion of the New Notes (as defined in Item 3 hereof) within 60 days of this report: 119,987 shares held by MPM BioVentures III, L.P., 1,784,369 shares held by MPM BioVentures III-QP, L.P., 150,796 shares held by MPM BioVentures III GmbH & Co. Beteiligungs KG and 53,894 shares held by MPM BioVentures III Parallel Fund, L.P. MPM Asset Management III, L.P. and MPM Asset Management III LLC are the direct and indirect general partners of MPM BioVentures III, L.P., MPM BioVentures III QP, L.P., MPM BioVentures III GmbH & Co. Beteiligungs KG and MPM BioVentures III Parallel Fund, L.P.
- (3) This percentage is calculated based upon 28,433,503 shares of the Issuer’s common stock outstanding on June 24, 2009, as reported in the Issuer’s preliminary proxy statement filed with the Securities and Exchange Commission in connection with its 2009 Annual Meeting of Stockholders.

<b>1</b>	NAME OF REPORTING PERSONS  I.R.S. Identification No(s). of above person(s) (entities only) MPM BioVentures III LLC	
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)  (a) <input type="radio"/> (b) <input checked="" type="checkbox"/> (1)	
<b>3</b>	SEC USE ONLY	
<b>4</b>	SOURCE OF FUNDS (SEE INSTRUCTIONS)  WC	
<b>5</b>	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e)  <input type="radio"/>	
<b>6</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	<b>7</b>	SOLE VOTING POWER  0
	<b>8</b>	SHARED VOTING POWER  5,529,688 (2)
	<b>9</b>	SOLE DISPOSITIVE POWER  0
	<b>10</b>	SHARED DISPOSITIVE POWER  5,529,688 (2)
<b>11</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  5,529,688 (2)	
<b>12</b>	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)  <input type="radio"/>	
<b>13</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)  18.1%(3)	
<b>14</b>	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)  OO	

(1) This Schedule is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a "group" for purposes of this Schedule 13D/A.

(2) Includes the following shares of common stock of the Issuer: 194,605 shares held by MPM BioVentures III, L.P., 2,894,054 shares held by MPM BioVentures III-QP, L.P., 244,574 shares held by MPM BioVentures III GmbH & Co. Beteiligungs KG, and 87,409 shares held by MPM BioVentures III Parallel Fund, L.P. Also includes the following shares of common stock of the Issuer that may be acquired upon conversion of the New Notes (as defined in Item 3 hereof) within 60 days of this report: 119,987 shares held by MPM BioVentures III, L.P., 1,784,369 shares held by MPM BioVentures III-QP, L.P., 150,796 shares held by MPM BioVentures III GmbH & Co. Beteiligungs KG and 53,894 shares held by MPM BioVentures III Parallel Fund, L.P. MPM Asset Management III, L.P. and MPM Asset Management III LLC are the direct and indirect general partners of MPM BioVentures III, L.P., MPM BioVentures III QP, L.P., MPM BioVentures III GmbH & Co. Beteiligungs KG and MPM BioVentures III Parallel Fund, L.P.

(3) This percentage is calculated based upon 28,433,503 shares of the Issuer's common stock outstanding on June 24, 2009, as reported in the Issuer's preliminary proxy statement filed with the Securities and Exchange Commission in connection with its 2009 Annual Meeting of Stockholders.



CUSIP No. 42224H104

<b>1</b>	NAME OF REPORTING PERSONS  I.R.S. Identification No(s). of above person(s) (entities only) Luke Evnin		
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)  (a) <input type="radio"/> (b) <input checked="" type="checkbox"/> (1)		
<b>3</b>	SEC USE ONLY		
<b>4</b>	SOURCE OF FUNDS (SEE INSTRUCTIONS)  WC		
<b>5</b>	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e)  <input type="radio"/>		
<b>6</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  United States		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	<b>7</b>	SOLE VOTING POWER  0	
	<b>8</b>	SHARED VOTING POWER  5,640,909 (2)	
	<b>9</b>	SOLE DISPOSITIVE POWER  0	
	<b>10</b>	SHARED DISPOSITIVE POWER  5,640,909 (2)	
<b>11</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  5,640,909 (2)		
<b>12</b>	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)  <input type="radio"/>		
<b>13</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)  18.5%(3)		
<b>14</b>	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)  IN		

- (1) This Schedule is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a "group" for purposes of this Schedule 13D/A.
- (2) Includes the following shares of common stock of the Issuer: 194,605 shares held by MPM BioVentures III, L.P., 2,894,054 shares held by MPM BioVentures III-QP, L.P., 244,574 shares held by MPM BioVentures III GmbH & Co. Beteiligungs KG, 87,409 shares held by MPM BioVentures III Parallel Fund, L.P. and 68,801 shares held by MPM Asset Management Investors 2004 BVII LLC. Also includes the following shares of common stock of the Issuer that may be acquired upon conversion of the New Notes (as defined in Item 3 hereof) within 60 days of this report: 119,987 shares held by MPM BioVentures III, L.P., 1,784,369 shares held by MPM BioVentures III-QP, L.P., 150,796 shares held by MPM BioVentures III GmbH & Co. Beteiligungs KG, 53,894 shares held by MPM BioVentures III Parallel Fund, L.P. and 42,420 shares held by MPM Asset Management Investors 2004 BVII LLC. MPM Asset Management III, L.P. and MPM Asset Management III LLC are the direct and indirect general partners of MPM BioVentures III, L.P., MPM BioVentures III QP, L.P., MPM BioVentures III GmbH & Co. Beteiligungs KG and MPM BioVentures III Parallel Fund, L.P. Luke Evnin, Ansbert Gadicke, Nicholas Galakatos, Dennis Henner, Nicholas Simon III, Michael Steinmetz and Kurt Wheeler are the Series A members of MPM BioVentures III LLC and the managers of MPM Asset Management Investors 2004 BVIII LLC.
- (3) This percentage is calculated based upon 28,433,503 shares of the Issuer's common stock outstanding on June 24, 2009, as reported in the Issuer's preliminary proxy statement filed with the Securities and Exchange Commission in connection with its 2009 Annual Meeting of Stockholders.



CUSIP No. 42224H104

<b>1</b>	NAME OF REPORTING PERSONS  I.R.S. Identification No(s). of above person(s) (entities only) Ansbert Gadicke		
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)  (a) <input type="radio"/> (b) <input checked="" type="checkbox"/> (1)		
<b>3</b>	SEC USE ONLY		
<b>4</b>	SOURCE OF FUNDS (SEE INSTRUCTIONS)  WC		
<b>5</b>	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e)  <input type="radio"/>		
<b>6</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  United States		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	<b>7</b>	SOLE VOTING POWER  828 (2)	
	<b>8</b>	SHARED VOTING POWER  5,640,909 (3)	
	<b>9</b>	SOLE DISPOSITIVE POWER  828 (2)	
	<b>10</b>	SHARED DISPOSITIVE POWER  5,640,909 (3)	
<b>11</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  5,641,737 (2)(3)		
<b>12</b>	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)  <input type="radio"/>		
<b>13</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)  18.5%(4)		
<b>14</b>	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)  IN		

- (1) This Schedule is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a “group” for purposes of this Schedule 13D/A.
- (2) Represents shares of common stock of the Issuer underlying an option to purchase shares of common stock that has vested or will vest within 60 days of this report.
- (3) Includes the following shares of common stock of the Issuer: 194,605 shares held by MPM BioVentures III, L.P., 2,894,054 shares held by MPM BioVentures III-QP, L.P., 244,574 shares held by MPM BioVentures III GmbH & Co. Beteiligungs KG, 87,409 shares held by MPM BioVentures III Parallel Fund, L.P. and 68,801 shares held by MPM Asset Management Investors 2004 BVII LLC. Also includes the following shares of common stock of the Issuer that may be acquired upon conversion of the New Notes (as defined in Item 3 hereof) within 60 days of this report: 119,987 shares held by MPM BioVentures III, L.P., 1,784,369 shares held by MPM BioVentures III-QP, L.P., 150,796 shares held by MPM BioVentures III GmbH & Co. Beteiligungs KG, 53,894 shares held by MPM BioVentures III Parallel Fund, L.P. and 42,420 shares held by MPM Asset Management Investors 2004 BVII LLC. MPM Asset Management III, L.P. and MPM Asset Management III LLC are the direct and indirect general partners of MPM BioVentures III, L.P., MPM BioVentures III QP, L.P., MPM BioVentures III GmbH & Co. Beteiligungs KG and MPM BioVentures III Parallel Fund, L.P. Luke Evnin, Ansbert Gadicke, Nicholas Galakatos, Dennis Henner, Nicholas Simon III, Michael Steinmetz and Kurt Wheeler are the Series A members of MPM BioVentures III LLC and the managers of MPM Asset Management Investors 2004 BVIII LLC.

(4) This percentage is calculated based upon 28,433,503 shares of the Issuer's common stock outstanding on June 24, 2009, as reported in the Issuer's preliminary proxy statement filed with the Securities and Exchange Commission in connection with its 2009 Annual Meeting of Stockholders.

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CUSIP No. 42224H104

<b>1</b>	NAME OF REPORTING PERSONS  I.R.S. Identification No(s). of above person(s) (entities only) Nicholas Galakatos		
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)  (a) <input type="radio"/> (b) <input checked="" type="checkbox"/> (1)		
<b>3</b>	SEC USE ONLY		
<b>4</b>	SOURCE OF FUNDS (SEE INSTRUCTIONS)  WC		
<b>5</b>	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e)  <input type="radio"/>		
<b>6</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  United States		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	<b>7</b>	SOLE VOTING POWER  0	
	<b>8</b>	SHARED VOTING POWER  5,640,909 (2)	
	<b>9</b>	SOLE DISPOSITIVE POWER  0	
	<b>10</b>	SHARED DISPOSITIVE POWER  5,640,909 (2)	
<b>11</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  5,640,909 (2)		
<b>12</b>	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)  <input type="radio"/>		
<b>13</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)  18.5%(3)		
<b>14</b>	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)  IN		

(1) This Schedule is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a "group" for purposes of this Schedule 13D/A.

(2) Includes the following shares of common stock of the Issuer: 194,605 shares held by MPM BioVentures III, L.P., 2,894,054 shares held by MPM BioVentures III-QP, L.P., 244,574 shares held by MPM BioVentures III GmbH & Co. Beteiligungs KG, 87,409 shares held by MPM BioVentures III Parallel Fund, L.P. and 68,801 shares held by MPM Asset Management Investors 2004 BVII LLC. Also includes the following shares of common stock of the Issuer that may be acquired upon conversion of the New Notes (as defined in Item 3 hereof) within 60 days of this report: 119,987 shares held by MPM BioVentures III, L.P., 1,784,369 shares held by MPM BioVentures III-QP, L.P., 150,796 shares held by MPM BioVentures III GmbH & Co. Beteiligungs KG, 53,894 shares held by MPM BioVentures III Parallel Fund, L.P. and 42,420 shares held by MPM Asset Management Investors 2004 BVII LLC. MPM Asset Management III, L.P. and MPM Asset Management III LLC are the direct and indirect general partners of MPM BioVentures III, L.P., MPM BioVentures III QP, L.P., MPM BioVentures III GmbH & Co. Beteiligungs KG and MPM BioVentures III Parallel Fund, L.P. Luke Evnin, Ansbert Gadicke, Nicholas Galakatos, Dennis Henner, Nicholas Simon III, Michael Steinmetz and Kurt Wheeler are the Series A members of MPM BioVentures III LLC and the managers of MPM Asset Management Investors 2004 BVIII LLC.

(3) This percentage is calculated based upon 28,433,503 shares of the Issuer's common stock outstanding on June 24, 2009, as reported in the Issuer's preliminary proxy statement filed with the Securities and Exchange Commission in connection with its 2009 Annual Meeting of Stockholders.



CUSIP No. 42224H104

<b>1</b>	NAME OF REPORTING PERSONS  I.R.S. Identification No(s). of above person(s) (entities only) Dennis Henner		
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)  (a) <input type="radio"/> (b) <input checked="" type="checkbox"/> (1)		
<b>3</b>	SEC USE ONLY		
<b>4</b>	SOURCE OF FUNDS (SEE INSTRUCTIONS)  WC		
<b>5</b>	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e)  <input type="radio"/>		
<b>6</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  United States		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	<b>7</b>	SOLE VOTING POWER  0	
	<b>8</b>	SHARED VOTING POWER  5,640,909 (2)	
	<b>9</b>	SOLE DISPOSITIVE POWER  0	
	<b>10</b>	SHARED DISPOSITIVE POWER  5,640,909 (2)	
<b>11</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  5,640,909 (2)		
<b>12</b>	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)  <input type="radio"/>		
<b>13</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)  18.5%(3)		
<b>14</b>	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)  IN		

- (1) This Schedule is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a “group” for purposes of this Schedule 13D/A.
- (2) Includes the following shares of common stock of the Issuer: 194,605 shares held by MPM BioVentures III, L.P., 2,894,054 shares held by MPM BioVentures III-QP, L.P., 244,574 shares held by MPM BioVentures III GmbH & Co. Beteiligungs KG, 87,409 shares held by MPM BioVentures III Parallel Fund, L.P. and 68,801 shares held by MPM Asset Management Investors 2004 BVII LLC. Also includes the following shares of common stock of the Issuer that may be acquired upon conversion of the New Notes (as defined in Item 3 hereof) within 60 days of this report: 119,987 shares held by MPM BioVentures III, L.P., 1,784,369 shares held by MPM BioVentures III-QP, L.P., 150,796 shares held by MPM BioVentures III GmbH & Co. Beteiligungs KG, 53,894 shares held by MPM BioVentures III Parallel Fund, L.P. and 42,420 shares held by MPM Asset Management Investors 2004 BVII LLC. MPM Asset Management III, L.P. and MPM Asset Management III LLC are the direct and indirect general partners of MPM BioVentures III, L.P., MPM BioVentures III QP, L.P., MPM BioVentures III GmbH & Co. Beteiligungs KG and MPM BioVentures III Parallel Fund, L.P. Luke Evnin, Ansbert Gadicke, Nicholas Galakatos, Dennis Henner, Nicholas Simon III, Michael Steinmetz and Kurt Wheeler are the Series A members of MPM BioVentures III LLC and the managers of MPM Asset Management Investors 2004 BVIII LLC.
- (3) This percentage is calculated based upon 28,433,503 shares of the Issuer’s common stock outstanding on June 24, 2009, as reported in the Issuer’s preliminary proxy statement filed with the Securities and Exchange Commission in connection with its 2009 Annual Meeting of Stockholders.





CUSIP No. 42224H104

<b>1</b>	NAME OF REPORTING PERSONS  I.R.S. Identification No(s). of above person(s) (entities only) Nicholas Simon III		
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)  (a) <input type="radio"/> (b) <input checked="" type="checkbox"/> (1)		
<b>3</b>	SEC USE ONLY		
<b>4</b>	SOURCE OF FUNDS (SEE INSTRUCTIONS)  WC		
<b>5</b>	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e)  <input type="radio"/>		
<b>6</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  United States		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	<b>7</b>	SOLE VOTING POWER  0	
	<b>8</b>	SHARED VOTING POWER  5,640,909 (2)	
	<b>9</b>	SOLE DISPOSITIVE POWER  0	
	<b>10</b>	SHARED DISPOSITIVE POWER  5,640,909 (2)	
<b>11</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  5,640,909 (2)		
<b>12</b>	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)  <input type="radio"/>		
<b>13</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)  18.5%(3)		
<b>14</b>	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)  IN		

- (1) This Schedule is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a “group” for purposes of this Schedule 13D/A.
- (2) Includes the following shares of common stock of the Issuer: 194,605 shares held by MPM BioVentures III, L.P., 2,894,054 shares held by MPM BioVentures III-QP, L.P., 244,574 shares held by MPM BioVentures III GmbH & Co. Beteiligungs KG, 87,409 shares held by MPM BioVentures III Parallel Fund, L.P. and 68,801 shares held by MPM Asset Management Investors 2004 BVII LLC. Also includes the following shares of common stock of the Issuer that may be acquired upon conversion of the New Notes (as defined in Item 3 hereof) within 60 days of this report: 119,987 shares held by MPM BioVentures III, L.P., 1,784,369 shares held by MPM BioVentures III-QP, L.P., 150,796 shares held by MPM BioVentures III GmbH & Co. Beteiligungs KG, 53,894 shares held by MPM BioVentures III Parallel Fund, L.P. and 42,420 shares held by MPM Asset Management Investors 2004 BVII LLC. MPM Asset Management III, L.P. and MPM Asset Management III LLC are the direct and indirect general partners of MPM BioVentures III, L.P., MPM BioVentures III QP, L.P., MPM BioVentures III GmbH & Co. Beteiligungs KG and MPM BioVentures III Parallel Fund, L.P. Luke Evnin, Ansbert Gadicke, Nicholas Galakatos, Dennis Henner, Nicholas Simon III, Michael Steinmetz and Kurt Wheeler are the Series A members of MPM BioVentures III LLC and the managers of MPM Asset Management Investors 2004 BVIII LLC.
- (3) This percentage is calculated based upon 28,433,503 shares of the Issuer’s common stock outstanding on June 24, 2009, as reported in the Issuer’s preliminary proxy statement filed with the Securities and Exchange Commission in connection with its 2009 Annual Meeting of Stockholders.



CUSIP No. 42224H104

<b>1</b>	NAME OF REPORTING PERSONS  I.R.S. Identification No(s). of above person(s) (entities only) Michael Steinmetz	
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)  (a) <input type="radio"/> (b) <input checked="" type="checkbox"/> (1)	
<b>3</b>	SEC USE ONLY	
<b>4</b>	SOURCE OF FUNDS (SEE INSTRUCTIONS)  WC	
<b>5</b>	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e)  <input type="radio"/>	
<b>6</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  United States	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	<b>7</b>	SOLE VOTING POWER  0
	<b>8</b>	SHARED VOTING POWER  5,640,909 (2)
	<b>9</b>	SOLE DISPOSITIVE POWER  0
	<b>10</b>	SHARED DISPOSITIVE POWER  5,640,909 (2)
<b>11</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  5,640,909 (2)	
<b>12</b>	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)  <input type="radio"/>	
<b>13</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)  18.5%(3)	
<b>14</b>	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)  IN	

(1) This Schedule is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a "group" for purposes of this Schedule 13D/A.

(2) Includes the following shares of common stock of the Issuer: 194,605 shares held by MPM BioVentures III, L.P., 2,894,054 shares held by MPM BioVentures III-QP, L.P., 244,574 shares held by MPM BioVentures III GmbH & Co. Beteiligungs KG, 87,409 shares held by MPM BioVentures III Parallel Fund, L.P. and 68,801 shares held by MPM Asset Management Investors 2004 BVII LLC. Also includes the following shares of common stock of the Issuer that may be acquired upon conversion of the New Notes (as defined in Item 3 hereof) within 60 days of this report: 119,987 shares held by MPM BioVentures III, L.P., 1,784,369 shares held by MPM BioVentures III-QP, L.P., 150,796 shares held by MPM BioVentures III GmbH & Co. Beteiligungs KG, 53,894 shares held by MPM BioVentures III Parallel Fund, L.P. and 42,420 shares held by MPM Asset Management Investors 2004 BVII LLC. MPM Asset Management III, L.P. and MPM Asset Management III LLC are the direct and indirect general partners of MPM BioVentures III, L.P., MPM BioVentures III QP, L.P., MPM BioVentures III GmbH & Co. Beteiligungs KG and MPM BioVentures III Parallel Fund, L.P. Luke Evnin, Ansbert Gadicke, Nicholas Galakatos, Dennis Henner, Nicholas Simon III, Michael Steinmetz and Kurt Wheeler are the Series A members of MPM BioVentures III LLC and the managers of MPM Asset Management Investors 2004 BVIII LLC.

(3) This percentage is calculated based upon 28,433,503 shares of the Issuer's common stock outstanding on June 24, 2009, as reported in the Issuer's preliminary proxy statement filed with the Securities and Exchange Commission in connection with its 2009 Annual Meeting of Stockholders.



CUSIP No. 42224H104

<b>1</b>	NAME OF REPORTING PERSONS  I.R.S. Identification No(s). of above person(s) (entities only) Kurt Wheeler	
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)  (a) <input type="radio"/> (b) <input checked="" type="checkbox"/> (1)	
<b>3</b>	SEC USE ONLY	
<b>4</b>	SOURCE OF FUNDS (SEE INSTRUCTIONS)  WC	
<b>5</b>	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e)  <input type="radio"/>	
<b>6</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  United States	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	<b>7</b>	SOLE VOTING POWER  0
	<b>8</b>	SHARED VOTING POWER  5,640,909 (2)
	<b>9</b>	SOLE DISPOSITIVE POWER  0
	<b>10</b>	SHARED DISPOSITIVE POWER  5,640,909 (2)
<b>11</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  5,640,909 (2)	
<b>12</b>	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)  <input type="radio"/>	
<b>13</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)  18.5%(3)	
<b>14</b>	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)  IN	

- (1) This Schedule is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a “group” for purposes of this Schedule 13D/A.
- (2) Includes the following shares of common stock of the Issuer: 194,605 shares held by MPM BioVentures III, L.P., 2,894,054 shares held by MPM BioVentures III-QP, L.P., 244,574 shares held by MPM BioVentures III GmbH & Co. Beteiligungs KG, 87,409 shares held by MPM BioVentures III Parallel Fund, L.P. and 68,801 shares held by MPM Asset Management Investors 2004 BVII LLC. Also includes the following shares of common stock of the Issuer that may be acquired upon conversion of the New Notes (as defined in Item 3 hereof) within 60 days of this report: 119,987 shares held by MPM BioVentures III, L.P., 1,784,369 shares held by MPM BioVentures III-QP, L.P., 150,796 shares held by MPM BioVentures III GmbH & Co. Beteiligungs KG, 53,894 shares held by MPM BioVentures III Parallel Fund, L.P. and 42,420 shares held by MPM Asset Management Investors 2004 BVII LLC. MPM Asset Management III, L.P. and MPM Asset Management III LLC are the direct and indirect general partners of MPM BioVentures III, L.P., MPM BioVentures III QP, L.P., MPM BioVentures III GmbH & Co. Beteiligungs KG and MPM BioVentures III Parallel Fund, L.P. Luke Evnin, Ansbert Gadicke, Nicholas Galakatos, Dennis Henner, Nicholas Simon III, Michael Steinmetz and Kurt Wheeler are the Series A members of MPM BioVentures III LLC and the managers of MPM Asset Management Investors 2004 BVIII LLC.
- (3) This percentage is calculated based upon 28,433,503 shares of the Issuer’s common stock outstanding on June 24, 2009, as reported in the Issuer’s preliminary proxy statement filed with the Securities and Exchange Commission in connection with its 2009 Annual Meeting of Stockholders.



The following constitutes Amendment No. 1 to the Schedule 13D previously filed by the undersigned with the Securities and Exchange Commission on August 14, 2007 (the "Schedule 13D/A"). The Schedule 13D/A is being filed to report the acquisition of notes and warrants in exchange for the disposition to the Issuer of the previously reported 8% senior unsecured convertible notes, which were due to mature on August 3, 2009. The Schedule 13D is hereby amended and restated in its entirety, as follows:

**Item 1. Security and Issuer.**

This statement relates to the common stock, \$0.0001 par value (the "Common Stock"), of PharmAthene, Inc., a Delaware corporation (the "Issuer"). The Issuer's principal executive offices are located at One Park Place, Suite 450, Annapolis, MD 21401.

**Item 2. Identity and Background.**

(a) The persons filing this statement are MPM BioVentures III, L.P., MPM BioVentures III-QP, L.P., MPM BioVentures III GmbH & Co. Beteiligungs KG, MPM BioVentures III Parallel Fund, L.P. and MPM Asset Management Investors 2004 BVIII LLC (collectively, the "MPM Entities") and Luke Evnin, Ansbert Gadicke, Nicholas Galakatos, Dennis Henner, Nicholas Simon III, Michael Steinmetz and Kurt Wheeler (collectively, the "Listed Persons" and together with the MPM Entities, the "Reporting Persons").

(b) The address of the principal place of business of each of the Reporting Persons is The John Hancock Tower, 200 Clarendon Street, 54<sup>th</sup> Floor, Boston, Massachusetts 02116.

(c) The principal business of each of the MPM Entities is the venture capital investment business. Each of the Listed Persons is a general partner of various venture capital investment funds.

(d) During the last five years, none of the Reporting Persons, to the knowledge of the MPM Entities, has been convicted in any criminal proceeding (excluding traffic violations or similar misdemeanors).

(e) During the last five years, none of the Reporting Persons, to the knowledge of the MPM Entities, has been a party to a civil proceeding of a judicial or administrative body of competent jurisdiction and as a result of such proceeding was or is subject to a judgment, decree, or final order enjoining future violations of, or prohibiting or mandating activities subject to, federal or state securities laws or finding any violation with respect to such laws.

(f) Each of the MPM Entities is a Delaware limited partnership or limited liability company, with the exception of MPM BioVentures III GmbH & Co. Beteiligungs KG, which is a German limited partnership. Each of the Listed Persons is a citizen of the United States.

In accordance with the provisions of General Instruction C to Schedule 13D, information concerning the managers and each other person controlling the general partners of the MPM Entities required by Item 2 of Schedule 13D is listed on Schedule 1 hereto and is incorporated by reference herein.

**Item 3. Source and Amount of Funds or Other Consideration.**

On July 28, 2009, the MPM Entities, the registered owners of the securities being reported on herein, entered into a Note and Warrant Purchase Agreement, dated as of July 24, 2009, as amended on July 26, 2009 and July 28, 2009, by and among the Issuer and the other parties thereto (the "Note and Warrant Purchase Agreement"). Pursuant to the Note and Warrant Purchase Agreement, the 8% Senior Unsecured Convertible Notes (the "Original Notes") in the aggregate principal amount of \$4,709,553.61 held by the MPM Entities were exchanged (the "Note Exchange") for new notes (the "New Notes") in the aggregate principal amount of \$5,468,315.02, which represented the principal amount of the Original Notes plus

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accrued interest as of July 28, 2009, and warrants to purchase an aggregate of 729,108 shares of Common Stock at an exercise price of \$2.50 per share (the "Warrants"). The Warrants become exercisable on January 28, 2010 and remain exercisable for five years, through January 28, 2015.

#### **Item 4. Purpose of Transaction.**

The MPM Entities acquired the securities which are the subject of this Schedule 13D/A in exchange for the Original Notes. The New Notes accrue interest at a rate of 10% per annum and are convertible into Common Stock at a conversion price of \$2.541667 per share (as compared to an 8% per annum interest rate and \$10.00 per share conversion rate applicable to the Old Notes). The New Notes mature on July 28, 2011. In addition, as described above, the MPM Entities acquired the Warrants to purchase an aggregate of 729,108 shares of Common Stock at an exercise price of \$2.50 per share. The Warrants become exercisable on January 28, 2010 and remain exercisable for five years, through January 28, 2015. The number of shares issuable upon conversion of the New Notes and upon exercise of the Warrants is subject to adjustment in accordance with the terms of the New Notes and the Warrants, respectively.

Pursuant to the Note and Warrant Purchase Agreement:

- (1) the Issuer agreed to maintain a Board of Directors consisting of no more than nine individuals and a Compensation Committee and Nominating Committee (or other committees serving similar functions) with no more than three members each;
- (2) MPM BioVentures III, L.P. ("MPM"), has the right, but not the obligation, to designate one director, which initially shall be Steven St. Peter, a current director of the Issuer;
- (3) HealthCare Ventures VII, L.P. ("HCVVII") has the right, but not the obligation, to designate one director, which initially shall be James Cavanaugh, a current director of the Issuer; and
- (4) Each holder of the New Notes has agreed to vote all of his, her or its voting securities to elect any such directors designated by MPM or HCVVII.

The MPM Entities acquired the securities of the Issuer for investment purposes, except as otherwise stated herein. Subject to the foregoing, as of the date of the filing of this Schedule 13D/A, none of the MPM Entities has a present plan or proposal that relates to or would result in any of the actions specified in clauses (a) through (j) of Item 4 of Schedule 13D. The MPM Entities intend to review from time to time their investment in the Issuer and depending on such review may consider various alternative courses of action. In addition, depending on prevailing conditions from time to time, including, without limitation, price and availability of shares, future evaluations by the MPM Entities of the business and prospects of the Issuer, regulatory requirements, other investment opportunities available to the MPM Entities and general stock market and economic conditions, the MPM Entities may determine to increase their investment or sell all or part of their investment in the Issuer through open-market purchases, privately negotiated transactions, a tender or exchange offer or otherwise.

#### **Item 5. Interest in Securities of the Issuer.**

The information in Items 5(a) and (b) and in Item 13 of each cover page to this Schedule 13D/A is based on an aggregate of 28,433,503 shares of Common Stock of the Issuer issued and outstanding as of June 24, 2009, as reported in the Issuer's preliminary proxy statement filed with the Securities and Exchange Commission in connection with its 2009 Annual Meeting of Stockholders, adjusted in accordance with Rule 13d-3 under the Securities Exchange Act of 1934, as amended, to reflect the issuance of an aggregate of 2,151,466 shares of Common Stock underlying the New Notes owned by the Reporting Persons, which are issuable upon conversion within 60 days of the date of filing of this Schedule 13D/A.

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(a) — (b) The following information with respect to the ownership of the common stock of the Issuer by the persons filing this Statement is provided as of August 4, 2009:

MPM Entity	Shares Issuable Upon Conversion of Notes Held Directly	Shares Held Directly	Sole Voting Power	Shared Voting Power	Sole Dispositive Power	Shared Dispositive Power	Beneficial Ownership	Percentage of Class
MPM BioVentures III, L.P.	119,987	194,605	314,592	0	314,592	0	314,592	1.1%
MPM BioVentures III-QP, L.P.	1,784,369	2,894,054	4,678,423	0	4,678,423	0	4,678,423	15.5%
MPM BioVentures III GmbH & Co. Beteiligungs KG	150,796	244,574	395,370	0	395,370	0	395,370	1.4%
MPM BioVentures III Parallel Fund, L.P.	53,894	87,409	141,303	0	141,303	0	141,303	0.5%
MPM Asset Management Investors 2004 BVIII LLC	42,420	68,801	111,221	0	111,221	0	111,221	0.4%
MPM BioVentures III GP, L.P.(1)	0	0	0	5,529,688	0	5,529,688	5,529,688	18.1%
MPM BioVentures III LLC(1)	0	0	0	5,529,688	0	5,529,688	5,529,688	18.1%
Luke Evnin(1)	0	0	0	5,640,909	0	5,640,909	5,640,909	18.5%
Ansbert Gadicke(1)(2)	0	828	828	5,640,909	828	5,640,909	5,641,737	18.5%
Nicholas Galakatos(1)	0	0	0	5,640,909	0	5,640,909	5,640,909	18.5%
Dennis Henner	0	0	0	5,640,909	0	5,640,909	5,640,909	18.5%
Nicholas Simon III(1)	0	0	0	5,640,909	0	5,640,909	5,640,909	18.5%
Michael Steinmetz(1)	0	0	0	5,640,909	0	5,640,909	5,640,909	18.5%
Kurt Wheeler(1)	0	0	0	5,640,909	0	5,640,909	5,640,909	18.5%

(1) MPM BioVentures III GP, L.P. and MPM BioVentures III LLC own no securities of the Issuer directly. MPM BioVentures III GP, L.P. and MPM BioVentures III LLC are the direct and indirect general partners of MPM BioVentures III-QP, L.P., MPM BioVentures III, L.P., MPM BioVentures III Parallel Fund, L.P. and MPM BioVentures III GmbH & Co. Beteiligungs KG. Luke Evnin, Ansbert Gadicke, Nicholas Galakatos, Dennis Henner, Nicholas Simon III, Michael Steinmetz and Kurt Wheeler are the Series A members of MPM BioVentures III LLC and managers of MPM Asset Management Investors 2004 BVIII LLC.

(2) Represents shares of common stock of the Issuer underlying an option to purchase shares of common stock that has vested or will vest within 60 days of this report.

(c) On July 28, 2009, the MPM Entities acquired the New Notes and Warrants to purchase shares of Common Stock at \$2.50 per share as follows:

	MPM Entity	New Notes (Principal)	Warrants
MPM BioVentures III, L.P.		\$ 304,967.95	40,662
MPM BioVentures III-QP, L.P.		\$4,535,272.77	604,703
MPM BioVentures III GmbH & Co. Beteiligungs KG		\$ 383,274.43	51,103
MPM BioVentures III Parallel Fund, L.P.		\$ 136,981.07	18,264
MPM Asset Management Investors 2004 BVIII LLC		\$ 107,818.80	14,376
Total		\$5,468,315.02	729,108

The New Notes are immediately convertible into an aggregate of 2,151,466 shares of Common Stock and the Warrants become exercisable on January 28, 2010 and remain exercisable for five years, through January 28, 2015. Except as set forth above, during the past 60 days, the Reporting Persons have not acquired any securities of the Issuer.

(d) Not applicable.

(e) Not applicable.

**Item 6. Contracts, Arrangements, Understandings or Relationships with Respect to Securities of the Issuer.**

**Note and Warrant Purchase Agreement**

As described in Item 4 above, the Note and Warrant Purchase Agreement includes agreements with respect to the election of persons designated by each of MPM and HCVVII to the Board of Directors of the Issuer.

**Registration Rights Agreement**

Concurrently with the closing of the Note and Warrant Purchase Agreement, the Issuer entered into a Registration Rights Agreement with the MPM Entities and the other noteholders pursuant to which, among other things, the Issuer agreed to file a registration statement with the Securities and Exchange Commission within thirty days of the closing in order to register for resale on a continuous basis all shares of Common Stock underlying the New Notes and Warrants held by the parties to the Registration Rights Agreement.

The descriptions contained in this Schedule 13D/A of the Note and Warrant Purchase Agreement, the New Notes, the Warrants and the Registration Rights Agreement are qualified in their entirety by reference to the full text of such agreements, copies of which are filed herewith as Exhibit 2 through Exhibit 4 and incorporated by reference in this Schedule 13D/A.

Other than as described in this Schedule 13D/A, to the best of the MPM Entities' knowledge, there are no other contracts, arrangements, understandings or relationships (legal or otherwise) among the persons named in Item 2 and between such persons and any person with respect to any securities of the Issuer.

**Item 7. Material to be Filed as Exhibits.**

<u>Exhibit No.</u>	<u>Description</u>
1.	Joint Filing Statement dated as of August 4, 2009 by and among the Reporting Persons.
2.	Form of Note and Warrant Purchase Agreement dated as of July 24, 2009, by and among the Issuer and the investors named therein, as amended by Amendment No. 1 to Note and Warrant Purchase Agreement, dated as of July 26, 2009 and Amendment No. 2 to Note and Warrant Purchase Agreement, dated as of July 28, 2009 (incorporated by reference to Exhibit 10.51 to the Issuer's Current Report on Form 8-K/A (File No. 001-32587), filed with the SEC on August 3, 2009).
3.	Form of Registration Rights Agreement dated as of July 28, 2009 by and among the Issuer and the investors named therein (incorporated by reference to Exhibit 10.51 to the Issuer's Current Report on Form 8-K/A (File No. 001-32587), filed with the SEC on August 3, 2009).
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5.	Form of Warrant to purchase common stock (incorporated by reference to Exhibit 4.10 to the Issuer's Current Report on Form 8-K/A (File No. 001-32587), filed with the SEC on August 3, 2009).

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**SIGNATURES**

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Dated: August 4, 2009

MPM BIOVENTURES III, L.P.

By: MPM BioVentures III GP, L.P.,  
its General Partner

By: MPM BioVentures III LLC,  
its General Partner

By:     /s/ Luke Evnin      
Name: Luke Evnin  
Title: Series A Member

MPM BIOVENTURES III-QP, L.P.

By: MPM BioVentures III GP, L.P.,  
its General Partner

By: MPM BioVentures III LLC,  
its General Partner

By:     /s/ Luke Evnin      
Name: Luke Evnin  
Title: Series A Member

MPM BIOVENTURES III PARALLEL FUND, L.P.

By: MPM BioVentures III GP, L.P.,  
its General Partner

By: MPM BioVentures III LLC,  
its General Partner

By:     /s/ Luke Evnin      
Name: Luke Evnin  
Title: Series A Member

MPM BIOVENTURES III GMBH & CO. BETEILIGUNGS  
KG

By: MPM BioVentures III GP, L.P.,  
in its capacity as the Managing Limited Partner

By: MPM BioVentures III LLC,  
its General Partner

By:     /s/ Luke Evnin      
Name: Luke Evnin  
Title: Series A Member

MPM ASSET MANAGEMENT INVESTORS 2004  
BVIII LLC

By:     /s/ Luke Evnin      
Name: Luke Evnin  
Title: Manager

MPM BIOVENTURES III GP, L.P.

By: MPM BioVentures III LLC,  
its General Partner

By:     /s/ Luke Evnin      
Name: Luke Evnin  
Title: Series A Member

MPM BIOVENTURES III LLC

By:     /s/ Luke Evnin      
Name: Luke Evnin  
Title: Series A Member

    /s/ Luke Evnin      
Luke Evnin



/s/ Ansbert Gadicke

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Ansbert Gadicke

/s/ Michael Steinmetz

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Michael Steinmetz

/s/ Nicholas Simon III

---

Nicholas Simon III

/s/ Nicholas Galakatos

---

Nicholas Galakatos

/s/ Kurt Wheeler

---

Kurt Wheeler

/s/ Dennis Henner

---

Dennis Henner

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## SCHEDULE I

### General Partners/Members:

Luke Evnin  
c/o MPM Asset Management  
The John Hancock Tower  
200 Clarendon Street, 54<sup>th</sup> Floor  
Boston, Massachusetts 02116

Principal Occupation: Series A member of the general partner of the general partner of MPM BioVentures III-QP, L.P., MPM BioVentures III, L.P., MPM BioVentures III Parallel Fund, L.P. and MPM BioVentures III GmbH & Co. Beteiligungs KG and manager of MPM Asset Management Investors 2004 BVIII LLC  
Citizenship: USA

Ansbert Gadicke  
c/o MPM Asset Management  
The John Hancock Tower  
200 Clarendon Street, 54<sup>th</sup> Floor  
Boston, Massachusetts 02116

Principal Occupation: Series A member of the general partner of the general partner of MPM BioVentures III-QP, L.P., MPM BioVentures III, L.P., MPM BioVentures III Parallel Fund, L.P. and MPM BioVentures III GmbH & Co. Beteiligungs KG and manager of MPM Asset Management Investors 2004 BVIII LLC  
Citizenship: USA

Nicholas Galakatos  
c/o MPM Asset Management  
The John Hancock Tower  
200 Clarendon Street, 54<sup>th</sup> Floor  
Boston, Massachusetts 02116

Principal Occupation: Series A member of the general partner of the general partner of MPM BioVentures III-QP, L.P., MPM BioVentures III, L.P., MPM BioVentures III Parallel Fund, L.P. and MPM BioVentures III GmbH & Co. Beteiligungs KG and manager of MPM Asset Management Investors 2004 BVIII LLC  
Citizenship: USA

Michael Steinmetz  
c/o MPM Asset Management  
The John Hancock Tower  
200 Clarendon Street, 54<sup>th</sup> Floor  
Boston, Massachusetts 02116

Principal Occupation: Series A member of the general partner of the general partner of MPM BioVentures III-QP, L.P., MPM BioVentures III, L.P., MPM BioVentures III Parallel Fund, L.P. and MPM BioVentures III GmbH & Co. Beteiligungs KG and manager of MPM Asset Management Investors 2004 BVIII LLC  
Citizenship: USA

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Kurt Wheeler  
c/o MPM Asset Management  
The John Hancock Tower  
200 Clarendon Street, 54<sup>th</sup> Floor  
Boston, Massachusetts 02116

Principal Occupation: Series A member of the general partner of the general partner of MPM BioVentures III-QP, L.P., MPM BioVentures III, L.P., MPM BioVentures III Parallel Fund, L.P. and MPM BioVentures III GmbH & Co. Beteiligungs KG and manager of MPM Asset Management Investors 2004 BVIII LLC  
Citizenship: USA

Nicholas Simon III  
c/o MPM Asset Management  
The John Hancock Tower  
200 Clarendon Street, 54<sup>th</sup> Floor  
Boston, Massachusetts 02116

Principal Occupation: Series A member of the general partner of the general partner of MPM BioVentures III-QP, L.P., MPM BioVentures III, L.P., MPM BioVentures III Parallel Fund, L.P. and MPM BioVentures III GmbH & Co. Beteiligungs KG and manager of MPM Asset Management Investors 2004 BVIII LLC  
Citizenship: USA

Dennis Henner  
c/o MPM Asset Management  
The John Hancock Tower  
200 Clarendon Street, 54<sup>th</sup> Floor  
Boston, Massachusetts 02116

Principal Occupation: Series A member of the general partner of the general partner of MPM BioVentures III-QP, L.P., MPM BioVentures III, L.P., MPM BioVentures III Parallel Fund, L.P. and MPM BioVentures III GmbH & Co. Beteiligungs KG and manager of MPM Asset Management Investors 2004 BVIII LLC  
Citizenship: USA

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<u>Exhibit No.</u>	<u>Description</u>
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Exhibit 1

JOINT FILING STATEMENT

The undersigned hereby agree that this Schedule 13D/A with respect to the Common Stock of PharmAthene, Inc. is, and any amendment thereto signed by each of the undersigned shall be, filed on behalf of each of the undersigned in accordance with the provisions of Rule 13d-1(k) under the Securities Exchange Act of 1934, as amended.

Dated: August 4, 2009

MPM BIOVENTURES III, L.P.

By: MPM BioVentures III GP, L.P.,  
its General Partner

By: MPM BioVentures III LLC,  
its General Partner

By: /s/ Luke Evnin  
Name: Luke Evnin  
Title: Series A Member

MPM BIOVENTURES III-QP, L.P.

By: MPM BioVentures III GP, L.P.,  
its General Partner

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its General Partner

By: /s/ Luke Evnin  
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MPM BIOVENTURES III PARALLEL FUND, L.P.

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Name: Luke Evnin  
Title: Series A Member

MPM BIOVENTURES III GMBH & CO. BETEILIGUNGS  
KG

By: MPM BioVentures III GP, L.P.,  
in its capacity as the Managing Limited Partner

By: MPM BioVentures III LLC,  
its General Partner

By: /s/ Luke Evnin  
Name: Luke Evnin  
Title: Series A Member

MPM ASSET MANAGEMENT INVESTORS 2004  
BVIII LLC

By: /s/ Luke Evnin  
Name: Luke Evnin  
Title: Manager

MPM BIOVENTURES III GP, L.P.

By: MPM BioVentures III LLC,  
its General Partner

By: /s/ Luke Evnin  
Name: Luke Evnin  
Title: Series A Member

MPM BIOVENTURES III LLC

By: /s/ Luke Evnin  
Name: Luke Evnin  
Title: Series A Member

/s/ Luke Evnin  
Luke Evnin

---

/s/ Ansbert Gadicke

---

Ansbert Gadicke

/s/ Michael Steinmetz

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Michael Steinmetz

/s/ Nicholas Simon III

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Nicholas Simon III

/s/ Nicholas Galakatos

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Nicholas Galakatos

/s/ Kurt Wheeler

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Kurt Wheeler

/s/ Dennis Henner

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Dennis Henner

Attention. Intentional misstatements or omissions of fact constitute federal criminal violations (see 18 U.S.C. 1001).