



OMB APPROVAL
OMB Number: 3235-0145
Expires: February 28, 2009
Estimated average burden hours per response...10.4

---

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

**SCHEDULE 13G**  
Under the Securities Exchange Act of 1934  
(Amendment No. 1)\*

**A.P. PHARMA, INC.**  
(Name of Issuer)

**Common Stock, par value \$0.01 per share**  
(Title of Class of Securities)

**00202J203**  
(CUSIP Number)

**December 31, 2007**  
(Date of Event Which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

Rule 13d-1(b)

Rule 13d-1(c)

Rule 13d-1(d)

\*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 the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be deemed to be "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 but shall be subject to all other provisions of the Act (however, see the Notes).

---

---

<b>1</b>	NAMES OF REPORTING PERSONS I.R.S. Identification Nos. of above persons (entities only).  RA Capital Management, LLC	
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)  (a) <input type="radio"/> (b) <input type="radio"/>	
<b>3</b>	SEC USE ONLY	
<b>4</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  Massachusetts	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	<b>5</b>	SOLE VOTING POWER  2,691,671
	<b>6</b>	SHARED VOTING POWER  0
	<b>7</b>	SOLE DISPOSITIVE POWER  2,691,671
	<b>8</b>	SHARED DISPOSITIVE POWER  0
<b>9</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  2,691,671	
<b>10</b>	CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)  <input type="radio"/>	
<b>11</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)  8.7%	
<b>12</b>	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)  IA	

<b>1</b>	NAMES OF REPORTING PERSONS I.R.S. Identification Nos. of above persons (entities only).  Richard H. Aldrich	
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)  (a) <input type="radio"/> (b) <input type="radio"/>	
<b>3</b>	SEC USE ONLY	
<b>4</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  United States	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	<b>5</b>	SOLE VOTING POWER  0
	<b>6</b>	SHARED VOTING POWER  2,691,671
	<b>7</b>	SOLE DISPOSITIVE POWER  0
	<b>8</b>	SHARED DISPOSITIVE POWER  2,691,671
<b>9</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  2,691,671	
<b>10</b>	CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)  <input type="radio"/>	
<b>11</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)  8.7%	
<b>12</b>	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)  IN	

<b>1</b>	NAMES OF REPORTING PERSONS I.R.S. Identification Nos. of above persons (entities only).  Peter Kolchinsky	
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)  (a) <input type="radio"/> (b) <input type="radio"/>	
<b>3</b>	SEC USE ONLY	
<b>4</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  United States	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	<b>5</b>	SOLE VOTING POWER  0
	<b>6</b>	SHARED VOTING POWER  2,691,671
	<b>7</b>	SOLE DISPOSITIVE POWER  0
	<b>8</b>	SHARED DISPOSITIVE POWER  2,691,671
<b>9</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  2,691,671	
<b>10</b>	CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)  <input type="radio"/>	
<b>11</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)  8.7%	
<b>12</b>	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)  IN	

<b>1</b>	NAMES OF REPORTING PERSONS I.R.S. Identification Nos. of above persons (entities only).  RA Capital Biotech Fund, L.P	
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)  (a) <input type="radio"/> (b) <input type="radio"/>	
<b>3</b>	SEC USE ONLY	
<b>4</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	<b>5</b>	SOLE VOTING POWER  2,657,344
	<b>6</b>	SHARED VOTING POWER  0
	<b>7</b>	SOLE DISPOSITIVE POWER  2,657,344
	<b>8</b>	SHARED DISPOSITIVE POWER  0
<b>9</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  2,657,344	
<b>10</b>	CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)  <input type="radio"/>	
<b>11</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)  8.6%	
<b>12</b>	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)  PN	

<b>1</b>	NAMES OF REPORTING PERSONS I.R.S. Identification Nos. of above persons (entities only).  RA Capital Biotech Fund II, L.P	
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)  (a) <input type="radio"/> (b) <input type="radio"/>	
<b>3</b>	SEC USE ONLY	
<b>4</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	<b>5</b>	SOLE VOTING POWER  34,327
	<b>6</b>	SHARED VOTING POWER  0
	<b>7</b>	SOLE DISPOSITIVE POWER  34,327
	<b>8</b>	SHARED DISPOSITIVE POWER  0
<b>9</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  34,327	
<b>10</b>	CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)  <input type="radio"/>	
<b>11</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)  0.1%	
<b>12</b>	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)  PN	

**Item 1.**

(a) **Name of Issuer:** A.P. Pharma, Inc. (the “Issuer”).

(b) **Address of the Issuer’s Principal Executive Offices:** 123 Saginaw Drive, Redwood City, CA 94063.

**Item 2.**

(a) **Name of Person Filing:** This joint statement on Schedule 13G is being filed by Richard H. Aldrich, Peter Kolchinsky, RA Capital Management, LLC, RA Capital Biotech Fund, L.P. and RA Capital Biotech Fund II, L.P., who are collectively referred to as the “Reporting Persons.” Mr. Aldrich and Mr. Kolchinsky (together, the “Managers”) are the managers of RA Capital Management, LLC (“Capital”), which is the sole general partner of RA Capital Biotech Fund, L.P. (“Fund I”) and RA Capital Biotech Fund II, L.P. (“Fund II”). The Reporting Persons have entered into a Joint Filing Agreement, dated as of the date hereof, a copy of which is filed with this Schedule 13G as Exhibit 2 (which is incorporated herein by reference), pursuant to which the Reporting Persons have agreed to file this statement jointly in accordance with the provisions of Rule 13d-1(k) under the Act.

(b) **Address of Principal Business Office:** The principal business office of the Reporting Persons with respect to the shares reported hereunder is 111 Huntington Avenue, Suite 610, Boston, Massachusetts 02199.

(c) **Citizenship:** Capital is a Massachusetts limited liability company. Each of Fund I and Fund II is a Delaware limited partnership. The Managers are U.S. citizens.

(d) **Title and Class of Securities:** Common stock, par value \$0.01 per share (“Common Stock”)

**Item 3. If this statement is filed pursuant to §§240.13d-1(b) or 240.13d-2(b) or (c), check whether the person filing is a:**

N/A

**Item 4. Ownership**

In the aggregate, the Reporting Persons beneficially own 2,691,671 shares of Common Stock of the Issuer, representing approximately 8.7% of such class of securities. The beneficial ownership of each Reporting Person is as follows: (i) Fund I beneficially owns 2,657,344 shares of Common Stock representing approximately 8.6% of the class, (ii) Fund II beneficially owns 34,327 shares of Common Stock representing approximately 0.1% of the class and (iii) Capital, as the sole general partner of each of Fund I and Fund II, and Mr. Aldrich and Mr. Kolchinsky as the managers of Capital, each beneficially own 2,691,671 shares of Common Stock of the Issuer representing approximately 8.7% of the class. The percentage of the Common Stock beneficially owned by each Reporting Person is based on a total of 30,791,404 shares of Common Stock of

---



the Issuer outstanding as of November 2, 2007, representing the number of shares outstanding as reported in the Issuer's Definitive Proxy Statement filed on Schedule 14A on November 15, 2007.

Each of Fund I and Fund II has the power to vote and dispose of the shares of Common Stock beneficially owned by such entity (as described above). Capital, as the sole general partner of each of Fund I and Fund II, has the sole authority to vote and dispose of all of the shares of Common Stock reported in this Schedule 13G. The Managers, by virtue of their position as managers of Capital, have the shared authority to vote and dispose of all of the shares of Common Stock reported in this joint statement Schedule 13G.

**Item 5. Ownership of Five Percent or Less of a Class**

N/A

**Item 6. Ownership of More than Five Percent on Behalf of Another Person**

N/A

**Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on By the Parent Holding Company or Control Person**

N/A

**Item 8. Identification and Classification of Members of the Group**

N/A

**Item 9. Notice of Dissolution of Group**

N/A

**Item 10. Certification**

By signing below I hereby certify that, to the best of my knowledge and belief, the securities referred to above were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect.

---

*Signature*

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.

DATE: February 14, 2008

RA CAPITAL BIOTECH FUND, L.P.

By: RA Capital Management, LLC  
General Partner

By: /s/ Richard H. Aldrich  
Richard H. Aldrich  
Manager

RA CAPITAL BIOTECH FUND II, L.P.

By: RA Capital Management, LLC  
General Partner

By: /s/ Richard H. Aldrich  
Richard H. Aldrich  
Manager

RA CAPITAL MANAGEMENT, LLC

By: /s/ Richard H. Aldrich  
Richard H. Aldrich  
Manager

RICHARD H. ALDRICH

/s/ Richard H. Aldrich

PETER KOLCHINSKY

/s/ Peter Kolchinsky

---

Exhibit 2

JOINT FILING AGREEMENT

Pursuant to Rule 13d-1(k)(1) under the Securities Exchange Act of 1934, as amended, the undersigned hereby agree, as of February 14, 2008, that only one statement containing the information required by Schedule 13G, and each amendment thereto, need be filed with respect to the ownership by each of the undersigned of shares of Common Stock of A.P. Pharma, Inc. (the "Issuer"), and such statement to which this Joint Filing Agreement is attached as Exhibit 2 is filed on behalf of each of the undersigned. This Agreement expressly supersedes the Joint Filing Agreement dated June 20, 2007 among the certain of the parties hereto with respect to the filing of information required by Schedule 13G in relation to Common Stock of the Issuer.

RA CAPITAL BIOTECH FUND, L.P.

By: /s/ Richard H. Aldrich

Richard H. Aldrich, Manager  
RA Capital Management, LLC

RA CAPITAL BIOTECH FUND II, L.P.

By: /s/ Richard H. Aldrich

Richard H. Aldrich, Manager  
RA Capital Management, LLC

RA CAPITAL MANAGEMENT, LLC

By: /s/ Richard H. Aldrich

Richard H. Aldrich  
Manager

RICHARD H. ALDRICH

/s/ Richard H. Aldrich

PETER KOLCHINSKY

/s/ Peter Kolchinsky