

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

SCHEDULE 13D
(Rule 13d-102)

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. ___)*

A.P. Pharma, Inc
(Name of Issuer)

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

00202J203
(CUSIP Number)

Leo Kirby
667 Madison Avenue, 17th Floor
New York, NY 10065
(212) 339-5633

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

October 19, 2009
(Date of Event which Requires Filing of this Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that 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 ..

*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 to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act.

(Continued on the following pages)

SCHEDULE 13D

CUSIP No. 00202J203

Page 2 of 12 Pages

1	NAMES OF REPORTING PERSONS I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS Felix J. Baker	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (See Instructions) (a) o (b) o	
3	SEC USE ONLY	
4	SOURCE OF FUNDS (See Instructions) WC	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) o	
6	CITIZENSHIP OR PLACE OF ORGANIZATION United States	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0
	8	SHARED VOTING POWER 9,444,462(1)
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 9,444,462(1)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 9,444,462(1)	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (See Instructions)	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 22.53%	
14	TYPE OF REPORTING PERSON (See Instructions) IN	

(1) See Item 5(a) of this Amendment for a detailed explanation of the shares of beneficial ownership and percentage ownership of the Reporting Persons.

***SEE INSTRUCTIONS BEFORE FILLING OUT!**

SCHEDULE 13D

CUSIP No. 00202J203

Page 3 of 12 Pages

1	NAMES OF REPORTING PERSONS I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS Julian C. Baker	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (See Instructions)	(a) o (b) o
3	SEC USE ONLY	
4	SOURCE OF FUNDS (See Instructions) WC	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e)	
6	CITIZENSHIP OR PLACE OF ORGANIZATION United States	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0
	8	SHARED VOTING POWER 9,444,462(1)
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 9,444,462(1)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 9,444,462(1)	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (See Instructions)	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 22.53%	
14	TYPE OF REPORTING PERSON (See Instructions) IN	

(1) See Item 5(a) of this Amendment for a detailed explanation of the shares of beneficial ownership and percentage ownership of the Reporting Persons.

***SEE INSTRUCTIONS BEFORE FILLING OUT!**

ITEM 1. Security and Issuer.

The class of equity security to which this statement on Schedule 13D relates is the common stock, par value \$0.01 per share (the "Common Stock") of A.P. Pharma, Inc., a corporation organized under the laws of the state of Delaware (the "Issuer"). The address of the principal executive offices of the Issuer is 123 Saginaw Drive, Redwood, CA 94063. Information given in response to each item shall be deemed incorporated by reference in all other items, as applicable.

ITEM 2. Identity and Background.

(a) The Reporting Persons are:

1. Felix J. Baker; and
2. Julian C. Baker

(b) The business address of each of the Reporting Persons is:

c/o Baker Bros. Advisors, LLC
667 Madison Avenue, 21st Floor
New York, NY 10065
(212) 339-5633

(c) The principal business of each Reporting Person is to serve as a managing member of Baker Bros. Advisors, LLC (an entity engaged in investment activities).

Certain securities of the Issuer are owned by Baker/ Tisch Investments, L.P., a limited partnership the sole general partner of which is Baker/ Tisch Capital, L.P., a limited partnership the sole general partner of which is Baker/ Tisch Capital (GP), LLC. Julian C. Baker and Felix J. Baker are the controlling members of Baker/ Tisch Capital (GP), LLC. As the sole general partner of Baker/ Tisch Capital, L.P., Baker/ Tisch Capital (GP), LLC may be deemed to be the indirect beneficial owner of such securities under Rule 16a-1(a)(2) promulgated under the Exchange Act. However, pursuant to Rule 16a-1(a)(4) promulgated under the Exchange Act, Baker/ Tisch Capital (GP), LLC disclaims beneficial ownership of such securities, except to the extent of its pecuniary interest therein. As the controlling members of Baker/ Tisch Capital (GP), LLC, Julian C. Baker and Felix J. Baker may be deemed to be the indirect beneficial owners of such securities under Rule 16a-1(a)(2) promulgated under the Exchange Act. However, pursuant to Rule 16a-1(a)(4) promulgated under the Exchange Act, each of Julian C. Baker and Felix J. Baker disclaims beneficial ownership of such securities, except to the extent of his pecuniary interest therein.

Certain securities of the Issuer are owned directly by Baker Bros. Investments II, L.P., a limited partnership the sole general partner of which is Baker Bros. Capital, L.P., a limited partnership the sole general partner of which is Baker Bros. Capital (GP), LLC. Julian C. Baker and Felix J. Baker are the controlling members of Baker Bros. Capital (GP), LLC. As the sole general partner of Baker Bros. Capital, L.P., Baker Bros. Capital (GP), LLC may be deemed to be the indirect beneficial owner of such securities under Rule 16a-1(a)(2) promulgated under the Exchange Act. However, pursuant to Rule 16a-1(a)(4) promulgated under the Exchange Act, Baker Bros. Capital (GP), LLC disclaims beneficial ownership of such securities, except to the extent of its pecuniary interest therein. As the controlling members of Baker Bros. Capital (GP), LLC, Julian C. Baker and Felix J. Baker may be deemed to be the indirect beneficial owners of such securities under Rule 16a-1(a)(2) promulgated under the Exchange Act. However, pursuant to Rule 16a-1(a)(4) promulgated under the Exchange Act, each of Julian C. Baker and Felix J. Baker disclaims beneficial ownership of such securities, except to the extent of his pecuniary interest therein.

Certain securities of the Issuer are owned directly by 667, L.P., a limited partnership the sole general partner of which is Baker Biotech Capital, L.P., a limited partnership the sole general partner of which is Baker Biotech Capital (GP), LLC. Julian C. Baker and Felix J. Baker are the controlling members of Baker Biotech Capital (GP), LLC. As the sole general partner of Baker Biotech Capital, L.P., Baker Biotech Capital (GP), LLC may be deemed to be the indirect beneficial owner of such securities under Rule 16a-1(a)(2) promulgated under the Exchange Act. However, pursuant to Rule 16a-1(a)(4) promulgated under the Exchange Act, Baker Biotech Capital (GP), LLC disclaims beneficial ownership of such securities, except to the extent of its pecuniary interest therein. As the controlling members of Baker Biotech Capital (GP), LLC, Julian C. Baker and Felix J. Baker may be deemed to be the indirect beneficial owners of such securities under Rule 16a-1(a)(2) promulgated under the Exchange Act. However, pursuant to Rule 16a-1(a)(4) promulgated under the Exchange Act, each of Julian C. Baker and Felix J. Baker disclaims beneficial ownership of such securities, except to the extent of his pecuniary interest therein.

Certain securities of the Issuer are owned directly by Baker Brothers Life Sciences, L.P., a limited partnership the sole general partner of which is Baker Brothers Life Sciences Capital, L.P., a limited partnership the sole general partner of which is Baker Brothers Life Sciences Capital (GP), LLC. Julian C. Baker and Felix J. Baker are the controlling members of Baker Brothers Life Sciences Capital (GP), LLC. As the sole general partner of Baker Brothers Life Sciences Capital, L.P., Baker Brothers Life Sciences Capital (GP), LLC may be deemed to be the indirect beneficial owner of such securities under Rule 16a-1(a)(2) promulgated under the Exchange Act. However, pursuant to Rule 16a-1(a)(4) promulgated under the Exchange Act, Baker Brothers Life Sciences Capital (GP), LLC disclaims beneficial ownership of such securities, except to the extent of its pecuniary interest therein. As the controlling members of Baker Brothers Life Sciences Capital (GP), LLC, Julian C. Baker and Felix J. Baker may be deemed to be the indirect beneficial owners of such securities under Rule 16a-1(a)(2) promulgated under the Exchange Act. However, pursuant to Rule 16a-1(a)(4) promulgated under the Exchange Act, each of Julian C. Baker and Felix J. Baker disclaims beneficial ownership of such securities, except to the extent of his pecuniary interest therein.

Certain securities of the Issuer are owned directly by 14159, L.P., a limited partnership the sole general partner of which is 14159 Capital, L.P., a limited partnership the sole general partner of which is 14159 Capital (GP), LLC. Julian C. Baker and Felix J. Baker are the controlling members of 14159 Capital (GP), LLC. As the sole general partner of 14159 Capital, L.P., 14159 Capital (GP), LLC may be deemed to be the indirect beneficial owner of such securities under Rule 16a-1(a)(2) promulgated under the Exchange Act. However, pursuant to Rule 16a-1(a)(4) promulgated under the Exchange Act, 14159 Capital (GP), LLC disclaims beneficial ownership of such securities, except to the extent of its pecuniary interest therein. As the controlling members of 14159 Capital (GP), LLC, Julian C. Baker and Felix J. Baker may be deemed to be the indirect beneficial owners of such securities under Rule 16a-1(a)(2) promulgated under the Exchange Act. However, pursuant to Rule 16a-1(a)(4) promulgated under the Exchange Act, each of Julian C. Baker and Felix J. Baker disclaims beneficial ownership of such securities, except to the extent of his pecuniary interest therein.

Each of 667, L.P., Baker Brothers Life Sciences, L.P. and 14159, L.P. is referred to individually as a "Purchasing Fund" and collectively as the "Purchasing Funds". Each of the Purchasing Funds, Baker/ Tisch Investments, L.P. and Baker Bros. Investments II, L.P. is part of the Baker Brothers Investments family of funds managed by the Reporting Persons (such funds and their affiliates or associates, "Baker").

(d) and (e) During the past five years, none of the Reporting Persons nor any of the persons listed in Item 2(b) and (c) above has been (i) convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors) or (ii) 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) The citizenship of each of Julian C. Baker and Felix J. Baker is the United States of America.

ITEM 3. Source and Amount of Funds or Other Consideration.

The Reporting Persons acquired certain of the shares of Common Stock in connection with a private placement by the Issuer (the "Offering") which closed on October 22, 2009 (the "Issuance Date"). In the Offering, the Issuer sold a total of (i) 7,954,543 shares of the Common Stock (collectively, the "Shares"), (ii) warrants to purchase an aggregate of 3,977,270 shares of the Common Stock (the "Warrants") at an exercise price of \$0.88 per share, for a purchase price of \$0.125 per share and (iii) rights to purchase an aggregate of up to 5,165,286 shares of the Common Stock (the "Purchase Rights") at a second closing to occur on May 14, 2010 or such earlier date as the purchasers having agreed to purchase a majority of the shares in such second closing mutually agree upon (the "Second Closing"), at a purchase price of \$0.968 per share, for a purchase price of \$0.125 per share.

The Warrants were exercisable on the Issuance Date and expire at 5:00 p.m. New York City time on January 7, 2015, subject to the Limitation on Exercise described in Item 5 below.

The Purchasing Funds purchased an aggregate of 3,977,272 Shares, 1,988,636 Warrants and 2,582,644 Purchase Rights as follows:

Fund	Shares	Price Paid	Warrants	Price Paid	Purchase Rights	Price Paid
667, L.P.	727,905	\$ 640,556.40	363,952	\$ 45,494.00	472,665	\$ 59,083.13
Baker Brothers Life Sciences, L.P.	3,160,131	\$ 2,780,915.28	1,580,066	\$ 197,508.25	2,052,033	\$ 256,504.13
14159, L.P.	89,236	\$ 78,527.68	44,618	\$ 5,577.25	57,946	\$ 7,243.25

Prior to participating in the Offering, the Reporting Persons expended an aggregate of approximately \$3,984,745.98 to purchase an aggregate of 2,884,546 shares of Common Stock (the "Previous Holdings"). Such transactions were effected in public offerings and open market purchases and the common stock was acquired in the ordinary course of business.

The funds used to purchase the Previous Holdings and the Shares, Warrants and Purchase Rights reported in Item 5 below were provided from the available working capital of the entities there indicated.

ITEM 4. Purpose of Transactions.

The Purchasing Funds acquired the Previous Holdings, Shares, Warrants and Purchase Rights solely for investment. The Reporting Persons expect to review from time to time the investment positions of these entities and may, depending on market and other conditions, increase or decrease their holdings.

Whether the entities purchase any additional shares of Common Stock, including by exercise of the Warrants or the Purchase Rights, or dispose of any shares of Common Stock, and the amount and timing of any such transactions, will depend upon the Reporting Persons' continuing assessments of pertinent factors, including the availability of shares of Common Stock for purchase at particular price levels, the Issuer's business and prospects, other business investment opportunities, economic conditions, stock market conditions, money market conditions, the attitudes and actions of the board of directors and management of the Issuer, the availability and nature of opportunities to dispose of shares in the Issuer and other plans and requirements of the particular entities. Depending upon their assessments of these factors from time to time, the Reporting Persons may change their present intentions as stated above, including determining to acquire additional shares of Common Stock (by means of open market purchases, privately negotiated purchases, exercise of some or all of the Warrants or Purchase rights, or otherwise) or to dispose of some or all of the shares of Common Stock under their control. At the present time the Reporting Persons do not have any plans or proposals with respect to any extraordinary corporate transaction involving the Issuer or any sale of its assets or any change in its board of directors, management, capitalization, dividend strategy, charter or by-laws, or any other change in its business or corporate structure or with respect to the delisting or deregistration of any of its securities including, without limitation, those matters described in subparagraphs (a) through (j) of Item 4 of Schedule 13D.

Pursuant to the terms of the Securities Purchase Agreement described in Item 6, Baker has the right to designate a representative (the "Baker Director Designee") to the board of directors of the Issuer as soon as practicable and no later than December 31, 2009. The Issuer shall cause the Baker Director Designee to be promptly appointed or elected to the board of directors of the Issuer including, if necessary, by amending its Bylaws to increase the number of authorized directors to enable the Baker Director Designee to be elected or appointed by the board of directors of the Issuer to the vacant seat created thereby. The Baker Director Designee shall be acceptable to the majority of board of directors of the Issuer, with such acceptance not to be unreasonably withheld.

In addition, in the event that the Purchasing Funds purchase no less than all of the Common Stock for which they hold the Purchase Rights described above at the Second Closing, Baker shall have the right to designate an additional representative (the "Second Baker Director Designee") to the board of directors of the Issuer concurrently with the Second Closing. The Issuer shall cause the Second Baker Director Designee to be promptly appointed or elected to the board of directors of the Issuer including, if necessary, by securing the resignation of an incumbent director as necessary to enable the Second Baker Director Designee to be elected or appointed by the board of directors of the Issuer to the vacant seat created thereby. The Second Baker Director Designee shall be acceptable to the majority of the board of directors of the Issuer, with such acceptance not to be unreasonably withheld.

Also in connection with the Securities Purchase Agreement, Baker was given certain observer rights and related rights with respect to the board of directors of the Issuer, as described in Item 6 below.

ITEM 5. Interest in Securities of the Issuer.

(a) and (b) Set forth below is the aggregate number of shares of the Common Stock held by the Purchasing Funds, Baker/ Tisch Investments, L.P. and Baker Bros. Investments II, L.P. and beneficially owned by the Reporting Persons, including shares that may be acquired upon the exercise of the Purchase Rights at a purchase price of \$0.968 per share, as of the date hereof by each of the following, together with the percentage of outstanding shares of the Common Stock that such number represents based upon (i) 31,376,432 shares of the Common Stock outstanding as reported on the Issuer's SEC Form 10-Q filed on August 4, 2009 in addition to (ii) 7,954,543 shares of the Common Stock issued on October 22, 2009, pursuant to the Securities Purchase Agreement described in Item 6. Such percentage figures are calculated on the basis that the Purchase Rights held by the Purchasing Funds are deemed exercised into shares of Common Stock but other outstanding derivative securities for the Common Stock are not deemed converted or exercised in shares of the Common Stock.

Holder	Shares of Common Stock	Purchase Rights	Total	Percentage of Class Outstanding
Baker/ Tisch Investments, L.P.	5,967	0	5,967	0.01%
Baker Bros. Investments II, L.P.	1,786	0	1,786	0.00%
667, L.P.	1,432,692	472,665	1,905,357	4.55%
Baker Brothers Life Sciences, L.P.	5,264,782	2,052,033	7,316,815	17.46%
14159, L.P.	156,591	57,946	214,537	0.51%

The Reporting Persons may be deemed beneficial owners of a combined total of 9,444,462 shares of Common Stock, representing 22.53% of total outstanding Common Stock (including Common Stock issuable upon exercise of Purchase Rights held by the Purchasing Funds).

The Reporting Persons may also be deemed beneficial owners of the Warrants in the amounts listed as follows:

Holder	Warrants
667, L.P.	363,952
Baker Brothers Life Sciences, L.P.	1,580,066
14159, L.P.	44,618

The number of shares of Common Stock that may be acquired by the Purchasing Funds upon any exercise of the Warrants is limited to the extent necessary to ensure that, following such exercise, the total number of shares of Common Stock then beneficially owned by the Reporting Persons does not exceed 9.999% of the total number of then issued and outstanding shares of Common Stock (including for such purpose the shares of Common Stock issuable upon such exercise) (the "Limitation on Exercise"). The Limitation on Exercise remains in effect with respect to the Warrants held by the Purchasing Funds and no shares are currently issuable upon exercise of the Warrants held by the Purchasing Funds.

By virtue of their ownership of entities that have the power to control the investment decisions of the limited partnerships listed in the table above, Julian C. Baker and Felix J. Baker may each be deemed to be beneficial owners of shares owned by the entities listed above and may be deemed to have shared power to vote or direct the vote of and shared power to dispose or direct the disposition of such securities.

(c) Except as described in this Schedule, including Item 3 hereof, none of the Reporting Persons has effected any transaction in the securities of the Issuer in the past 60 days.

(d) No person other than the Reporting Persons has the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of the securities to which this Schedule relates.

(e) Not applicable.

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

Securities Purchase Agreement

As disclosed in Item 3, above, the Purchasing Funds entered into a securities purchase agreement with the Issuer, dated October 19, 2009 (the "Securities Purchase Agreement"), pursuant to which such Reporting Persons purchased an aggregate of 3,977,272 Shares, 1,988,636 Warrants and 2,582,644 Purchase Rights.

The foregoing description of the Securities Purchase Agreement, including as disclosed in Item 3, is only a summary and is qualified in its entirety by reference to the Securities Purchase Agreement, a copy of which is filed as Exhibit 2 hereto.

Warrants

Pursuant to the Securities Purchase Agreement, the Purchasing Funds purchased warrants to purchase an aggregate of 1,988,636 shares of Common Stock at an exercise price of \$0.88 per share, for a purchase price of \$0.125 per share.

The foregoing description of the warrants is only a summary and is qualified in its entirety by reference to the form of warrant, a copy of which is filed as Exhibit 3 hereto.

Registration Rights Agreement

In connection with the Securities Purchase Agreement, on October 22, 2009, the Issuer entered into a Registration Rights Agreement (the "Registration Rights Agreement") with the Purchasing Funds and the other parties thereto. Pursuant to the Registration Rights Agreement, the Issuer agreed to prepare and file a registration statement with the Securities and Exchange Commission (the "SEC") within 30 days of the initial closing date of October 22, 2009 for purposes of registering the resale of the Shares, the shares of common stock issuable upon exercise of the Warrants and Purchase Rights and any shares of common stock issued as a dividend or other distribution with respect to the Shares or shares underlying the Warrants and Purchase Rights. The Issuer agreed to use its best efforts to cause the registration statement to be declared effective by the SEC within 90 days after the initial closing date of October 22, 2009 (or 120 days in the event the registration statement is reviewed by the SEC). If the Issuer fails to meet either of these deadlines, fails to meet filing or effectiveness deadlines with respect to any additional registration statements required by the Registration Rights Agreement or fails to keep any registration statements continuously effective (with limited exceptions), the Issuer may be obligated to pay to the holders of the Shares, Warrants and Purchase Rights liquidated damages in the amount of 1% per month of the purchase price for the Shares, Warrants and Purchase Rights, up to a maximum cap of 8%. The Issuer also agreed, among other things, to indemnify the selling holders under the registration statements from certain liabilities and to pay all fees and expenses (excluding underwriting discounts and selling commissions and all legal fees of any selling holder) incident to the Issuer's obligations under the Registration Rights Agreement.

The foregoing description of the transaction is only a summary and is qualified in its entirety by reference to the Registration Rights Agreement, a copy of which is filed as Exhibit 4 hereto.

Except as described in this Item 6, none of the Reporting Persons have any other existing agreement with respect to the Common Stock or other securities of the Issuer.

Board Observation Rights Agreement

In connection with the Securities Purchase Agreement, on October 22, 2009, the Issuer entered into a letter agreement (the "Board Observation Rights Agreement") with Baker, pursuant to which Baker was granted the right to designate one observer (the "Baker Observer"), who shall have the right to attend all regular, special and telephonic meetings of the board of directors of the Issuer, and to receive materials sent to the members of the board of directors in their capacity as such, until May 14, 2010 (the "Observer Period"), unless Baker notifies the Issuer in writing that it wishes to suspend such observer rights. The Issuer agrees to give the Baker Observer, during the Observer Period, notice of such meetings, by telecopy or by such other means as such notices are delivered to the members of the Issuer's board of directors, at the same time notice is provided or delivered to the board of directors

The foregoing description of the transaction is only a summary and is qualified in its entirety by reference to the Registration Rights Agreement, a copy of which is filed as Exhibit 5 hereto.

ITEM 7. Materials to be Filed as Exhibits.

- Exhibit 1: Joint Filing Agreement as required by Rule 13d-1(k)(1) under the Securities Exchange Act of 1934, as amended, dated October 29, 2009, by and between Julian C. Baker and Felix J. Baker
- Exhibit 2: Securities Purchase Agreement dated October 19, 2009, by and among A.P. Pharma, Inc. and the purchasers listed on Exhibit A thereto. (Incorporated by reference to Exhibit 10.1 to the Issuer's Current Report on Form 8-K (File No. 001-33221), filed with the SEC on October 22, 2009.)
- Exhibit 3: Form of Warrant to Purchase Shares of Common Stock of A.P. Pharma, Inc. (Incorporated by reference to Exhibit 10.3 to the Issuer's Current Report on Form 8-K (File No. 001-33221), filed with the SEC on October 22, 2009.)
- Exhibit 4: Registration Rights Agreement made and entered into as of October 22, 2009 by and among A.P. Pharma, Inc. and the purchasers' signatory thereto. (Incorporated by reference to Exhibit 10.2 to the Issuer's Current Report on Form 8-K (File No. 001-33221), filed with the SEC on October 22, 2009.)
- Exhibit 5: Board Observation Rights Agreement, between A.P. Pharma, Inc. and Baker, dated October 22, 2009
-

SIGNATURES

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

EXECUTED as a sealed instrument this 29th day of October, 2009.

By: /s/ Julian C. Baker

Julian C. Baker

By: /s/ Felix J. Baker

Felix J. Baker

JOINT FILING AGREEMENT

Pursuant to Rule 13d-1(k)(1) under the Securities Exchange Act of 1934, as amended, the undersigned hereby agree that only one statement containing the information required by Schedule 13D need be filed with respect to the ownership by each of the undersigned of the shares of Common Stock of A.P. Pharma, Inc.

This Agreement may be executed in any number of counterparts, each of which shall be deemed an original.

EXECUTED as of this 29th day of October, 2009.

By: /s/ Julian C. Baker
Julian C. Baker

By: /s/ Felix J. Baker
Felix J. Baker

A.P. PHARMA, INC.

October 22, 2009

VIA EMAIL

Baker Brothers Investments
667 Madison Avenue
21st Floor
New York, NY 10065
Attention: Felix Baker

Re: Board Observation Rights

Ladies and Gentlemen:

Pursuant to Section 8.3 of that certain Securities Purchase Agreement by and among A.P. Pharma, Inc. (the "**Company**") and the purchasers listed therein, dated October 19, 2009 (the "**Purchase Agreement**"), the Company hereby agrees as follows:

1. **Observation Rights; Board Materials.** The Company covenants and agrees that Baker Brothers Investments (the "**Investor**") may designate a representative (the "**Observer**") to be present at all regular, special and telephonic meetings of the Company's Board of Directors (the "**Board**"), and that the Company will give the Investor notice of such meetings, by telecopy or by such other means as such notices are delivered to the members of the Board, at the same time notice is provided or delivered to the Board. Board materials that are sent to the members of the Board in their capacity as such shall be sent to the Observer simultaneously by the Company by means reasonably designed to insure timely receipt by the Observer. Upon reasonable notice and at a scheduled meeting of the Board or such other time, if any, as the Board may determine in its sole discretion, the Observer may address the Board with respect to the Investor's concerns regarding significant business issues facing the Company. The Investor hereby agrees that any non-public proprietary information obtained by the Investor and/or Observer as a result of the Observer's attendance at Board meetings, or in connection with the Investor's and/or Observer's receipt of Board materials, shall be held in confidence and will not be disclosed by the Investor or any affiliates of the Investor or the Observer, except to the extent otherwise required by law. In addition, the Observer agrees and covenants to be bound by all applicable restrictions placed on the Company's board of directors, including trading windows and black-out periods relating to the sale of the Company's securities.

Notwithstanding the provisions of the first paragraph of this Section 1, the Company shall be entitled to recuse the Observer from portions of any Board meeting and to redact portions of any Board materials delivered to the Investor and/or the Observer where recusal or redaction is reasonably necessary, in the opinion of counsel to the Company, (i) to preserve attorney-client privilege, (ii) to protect highly confidential information or trade secrets (in each case as determined in good faith by the Board of Directors) or (iii) in the event the Board intends to discuss or vote upon any matter in which the Investor and/or the Observer have a material business or financial interest (other than by reason of the Investor's and/or the Observer's interests as a stockholder of the Company). Further, the members of the Board shall be entitled to hold Executive Sessions (as hereinafter defined) which the Observer may not be invited to attend. "**Executive Sessions**" shall mean meetings of the members of the Board in which the Company's Chief Executive Officer is not present.

2. Termination or Suspension of Rights. The rights under Section 1 of this letter agreement shall terminate on May 14, 2010 and shall not apply at any time that the Second Baker Director Designee (as defined in the Purchase Agreement) is serving on the Board. The confidentiality provision hereof will survive any termination of this letter agreement.

3. Counterparts. This letter agreement may be executed in counterparts and signature pages may be delivered by facsimile, each of which shall be deemed an original and all of which, taken together, shall constitute one and the same instrument.

Sincerely,

A.P. PHARMA, INC.

By: /s/ Ronald J. Prentki

Name: Ronald J. Prentki

Title: President and Chief Executive Officer

ACKNOWLEDGED AND AGREED:

BAKER BROTHERS INVESTMENTS

By: /s/ Felix Baker

Name: Felix Baker

Title: Managing Member