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As filed with the Securities and Exchange Commission on June 13, 2011
Registration Statement No. 333-174288

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

FORM S-1
Amendment No. 1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

A.P. Pharma, Inc.
(Exact name of registrant as specified in its charter)

Delaware	**94-2875566**
(State of incorporation)	**(I.R.S. Employer Identification Number)**

123 Saginaw Drive
Redwood City, CA 94063
(650) 366-2626
(Address, including zip code and telephone number, including area code, of Registrant's principal executive offices)

John B. Whelan
Chief Executive Officer and
Chief Financial Officer
A. P. Pharma, Inc.
123 Saginaw Drive
Redwood City, California 94063
(650) 366-2626
(Name, address, including zip code and telephone number, including area code, of agent for service)

Copies to:

Ryan Murr, Esq.
Ropes & Gray LLP
Three Embarcadero Center
San Francisco, CA 94111
(415) 315-6300

Approximate date of commencement of proposed sale to the public: From time to time after this registration statement becomes effective, as determined by the registrant.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, please check the following box. ☒

If this Form is used to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

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

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☐ (Do not check if a smaller reporting company)	Smaller reporting company	☒

The registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until the Registration Statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

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The information in this prospectus is not complete and may be changed. The security holders identified in this prospectus may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

PROSPECTUS (Subject to Completion)
dated June 13, 2011

A.P. PHARMA, INC.

271,221,610 shares of Common Stock

This prospectus covers the sale of an aggregate of up to 271,221,610 shares of our Common Stock, $0.01 par value per share, by the selling security holders identified in this prospectus (collectively with any such holder's transferee, pledgee, donee or successor, referred to below as the "Selling Stockholders"). The Common Stock covered by this prospectus consists of shares of common stock potentially issuable upon conversion of our Senior Secured Convertible Notes due 2021, or the "Notes". The currently outstanding Notes were issued pursuant to a Securities Purchase Agreement we entered into on April 24, 2011 with selected accredited investors.

The number of shares registered in the Registration Statement is based upon the shares potentially issuable under the Notes at maturity in May 2021 (based on the current outstanding principal balance of $1,500,000 and assuming all interest payments are made in-kind). We note that the actual number of shares that may be issued under the Notes may be less, if the Notes are converted prior to maturity or if the Note holders elect to receive interest payments in cash.

We will not receive any proceeds from the sale by the Selling Stockholders of the shares covered by this prospectus. We are paying the cost of registering the shares covered by this prospectus, as well as various related expenses. The Selling Stockholders are responsible for all selling commissions, transfer taxes and other costs related to the offer and sale of their shares under this prospectus. If required, the number of shares to be sold, the public offering price of those shares, the names of any broker-dealers and any applicable commission or discount will be included in a supplement to this prospectus, called a prospectus supplement.

Our Common Stock is quoted on the OTCQB Market under the symbol "APPA.PK". On June 8, 2011, the last reported sale price per share of our Common Stock on the OTCQB was $0.13. Our principal executive offices are located at 123 Saginaw Drive, Redwood City, California 94063, and our telephone number is (650) 366-2626.

Investing in our securities involves risks. You should carefully consider the risk factors beginning on page 3 of this prospectus before you make an investment in our securities.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is _____

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You should read this prospectus, any applicable prospectus supplement and the information incorporated by reference in this prospectus before making an investment in the securities of A.P. Pharma, Inc. See “Where You Can Find Additional Information” for more information, page 11. You should rely only on the information contained in or incorporated by reference in this prospectus or a prospectus supplement. The Company has not authorized anyone to provide you with different information. This document may be used only in jurisdictions where offers and sales of these securities are permitted. You should assume that information contained in this prospectus, or in any document incorporated by reference, is accurate only as of any date on the front cover of the applicable document. Our business, financial condition, results of operations and prospects may have changed since that date.

NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the documents incorporated by reference into it contain forward-looking statements that involve risks and uncertainties. The statements contained or incorporated by reference in this prospectus that are not purely historical are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the “**Securities Act**”) and Section 21E of the Securities Exchange Act of 1934, as amended (the “**Exchange Act**”). The Company has made these statements in reliance on the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. These forward-looking statements relate to future events or our future performance and include, but are not limited to; statements concerning our development plans for our product candidates, expected timing for certain FDA actions, business strategy, future research and development projects, potential commercial revenues, capital requirements, new potential product introductions, expansion plans and the Company’s funding requirements. Other statements contained in our filings that are not historical facts are also forward-looking statements. We have tried to identify forward-looking statements by terminology such as “may,” “will,” “could,” “should,” “expects,” “anticipates,” “intends,” “plans,” “believes,” “seeks,” “estimates” and other comparable terminology.

Forward-looking statements are not guarantees of future performance and are subject to various risks, uncertainties and assumptions that are difficult to predict. Actual results may differ materially from those anticipated in these forward-looking statements as a result of a number of factors, including the risk factors described below in this prospectus and in our periodic filings with the SEC, incorporated by reference or included in this prospectus. All forward-looking statements contained in this prospectus are made only as of the date on the prospectus cover or as of the date of the filings incorporated herein by reference, as applicable. We expressly disclaim any intent to update or alter our forward-looking statements, whether as a result of new information, future events or otherwise. Before deciding to buy or sell our securities, you should be aware that the occurrence of the events described in these risk factors could harm our business, operating results and financial condition, which consequences could materially diminish the trading price of our securities and/or their value.

Unless the context requires otherwise, in this Prospectus, the “Company,” “A.P. Pharma,” “we,” “us” and “our” refer to A.P. Pharma, Inc.

PROSPECTUS SUMMARY

Our Business

A.P. Pharma, Inc. is a specialty pharmaceutical company developing products using its proprietary Biochronomer(TM) polymer-based drug delivery technology. Our primary focus is on our lead product candidate, APF530, for the prevention of chemotherapy-induced nausea and vomiting. We are seeking regulatory approval of APF530 for the prevention of acute CINV for patients undergoing both moderately and highly emetogenic chemotherapy, and for prevention of delayed CINV for patients undergoing moderately emetogenic chemotherapy. We received a Complete Response Letter on the APF530 NDA and are targeting the resubmission of the NDA for the first half of 2012. If we obtain regulatory approval for APF530, we intend to seek a collaborative arrangement to commercialize APF530, or anticipate obtaining additional funding and resources that would be required to launch APF350 without a partner.We have additional clinical and preclinical stage programs in the area of pain management, all of which utilize our bioerodible, injectable and implantable delivery systems.

For additional information relating to the Company and its operations, please refer to the reports incorporated herein by reference as described under the caption “Information Incorporated by Reference.”

Our common stock is quoted on the OTCQB under the symbol “APPA.PK”.

The Offering

This prospectus relates to the resale by the Selling Stockholders identified in this prospectus of up to 271,221,610 shares of Common Stock, all of which are issuable upon the conversion of our currently outstanding Senior Secured Convertible Notes, due 2021, or the “Notes” (such underlying shares being referred to herein as the “Shares”). All of the Shares, if and when sold, will be sold by the Selling Stockholders. The Selling Stockholders may sell their Shares from time to time at market prices prevailing at the time of sale, at prices related to the prevailing market price, or at negotiated prices. We will not receive any proceeds from the sale of Shares by the Selling Stockholders. The number of shares registered in the Registration Statement is based upon the shares potentially issuable under the Notes at maturity in May 2021 (based on the current outstanding principal balance of $1,500,000 and assuming all interest payments are made in-kind). We note that the actual number of shares that may be issued under the Notes may be less, if the Notes are converted prior to maturity or if the Note holders elect to receive interest payments in cash.

The total value of the 271,221,610 shares of Common Stock being registered hereunder is approximately $35,258,800, based on the last quoted sale price for our Common Stock of $0.13 on June 9, 2011.

Corporate Information

Our executive offices are located at 123 Saginaw Drive, Redwood City, California 94063 and our telephone number is 650-366-2626. Additional information regarding our company, including our audited financial statements and descriptions of our business, is contained in the documents incorporated by reference in this prospectus. See “Where You Can Find Additional Information” on page 11 and “Information Incorporated by Reference” on page 11.

RISK FACTORS

Investors should carefully consider the risks and uncertainties and all other information contained or incorporated by reference in this prospectus, including the risks and uncertainties discussed under “Risk Factors” in our Annual Report on Form 10-K for the year ended December 31, 2010 and in subsequent filings that are incorporated herein by reference. All of these “Risk Factors” are incorporated by reference herein in their entirety. These risks and uncertainties are not the only ones facing us. Additional risks of which we are not presently aware or that we currently believe are immaterial may also harm our business and results of operations. The trading price of our common stock could decline due to the occurrence of any of these risks, and investors could lose all or part of their investment. In assessing these risks, investors should also refer to the other information contained or incorporated by reference in our other filings with the Securities and Exchange Commission.

USE OF PROCEEDS

The proceeds from the resale of the Shares under this prospectus are solely for the account of the Selling Stockholders. Accordingly, we will receive no proceeds from this offering.

SELLING SECURITY HOLDERS

The Company has included in this prospectus up to 271,221,610 Shares, which are potentially issuable upon the conversion of the Notes, subject to the Company having sufficient authorized but unissued shares to allow for their issuance on conversion of the Notes. See “Description of Securities to be Registered”.

In April 2011, we entered into a Securities Purchase Agreement (the “Purchase Agreement”) with the Selling Stockholders. Pursuant to the Purchase Agreement, the Company may issue up to $4.5 million in aggregate principal amount of Notes. There is currently $1.5 million in aggregate principal amount of Notes outstanding. The Notes bear interest at 20% per annum and holders of Notes may elect to receive “in-kind” interest payments, with any such in-kind interest payments added to the principal amount of such holder’s Notes. This prospectus covers the resale by the Selling Stockholders of the shares of Common Stock issuable upon conversion of the currently outstanding Notes, including additional amounts that could be added to the principal amount over the ten year term of the Notes.

The following table sets forth certain information regarding the Selling Stockholders, the Shares that may be offered by this prospectus, as well as other shares of Common Stock beneficially owned by them. Selling Stockholders may offer Shares under this prospectus from time to time and may elect to sell none, some or all of the Shares set forth below. As a result, we cannot estimate the number of Shares of Common Stock that a Selling Stockholder will beneficially own after termination of sales under this prospectus. However, for the purposes of the table below, we have assumed that, after completion of the offering, none of the Shares covered by this prospectus will be held by the Selling Stockholders. In addition, a Selling Stockholder may have sold, transferred or otherwise disposed of all or a portion of that holder’s Shares since the date on which they provided information for this table. We are relying on the Selling Stockholders to notify us of any changes in their beneficial ownership after the date they originally provided this information. See “Plan of Distribution” beginning on page 7.

Selling Stockholder (1)	# of Shares held before Offering	Total # of Shares covered by this Prospectus	# of Shares beneficially owned after Offering(2)	% of Shares beneficially owned after Offering
Tang Capital Partners, LP(3)	228,202,141	216,977,288	11,224,853	3.6%
Baker Bros. Investments II, L.P.(4)	6,916,062	54,244	6,861,818	2.2%
Baker Brothers Life Sciences, L.P.(4)	60,075,498	53,213,680	6,861,818	2.2%
14159, L.P.(4)	7,838,216	976,398	6,861,818	2.2%

(1) If required, information about other selling security holders, except for any future transferees, pledgees, donees or successors of Selling Stockholders named in the table above, will be set forth in a prospectus supplement or amendment to the registration statement of which this prospectus is a part. Additionally, post-effective amendments to the registration statement will be filed to disclose any material changes to the plan of distribution from the description contained in the final prospectus.

(2) This number assumes the sale of all Shares offered by this prospectus.

(3) Tang Capital Management, LLC is the general partner of Tang Capital Partners, LP. Kevin C. Tang, a natural person, is the Managing Director of Tang Capital Management, LLC and is a member of the Company’s Board of Directors. The address for Tang Capital Partners, L.P. is 4401 Eastgate Mall, San Diego, CA 92121. Mr. Tang has sole voting and dispositive power over these shares. Mr. Tang disclaims beneficial ownership of all shares beneficially owned, except to the extent of his pecuniary interests therein.

(4) Includes 5,264,782 shares held of record by Baker Brothers Life Sciences, L.P., 1,432,692 shares held of record by 667, L.P., 156,591 shares held of record by 14159, L.P., 5,967 shares held of record by Baker/Tisch Investments, L.P. and 1,786 shares held of record by Baker Bros. Investments II, L.P. (collectively referred to herein as the “Baker Entities”). Mr. Julian Baker and Mr. Felix Baker share voting and dispositive power over the shares held by the Baker Entities. Mr. Julian Baker and Mr. Felix Baker disclaim beneficial ownership over all shares held by the Baker Entities, except to the extent to the extent of their pecuniary interest in such shares. The address for the Baker Entities is 667 Madison Avenue, New York, NY 10065.

Net proceeds to the Company in sale of the Notes pursuant to the Purchase Agreement were $1,434,014. The Company paid $65,986 to the Selling Stockholders for transaction related expenses. The Company has made no other payments to the Selling Stockholders in connection with the sale of the Notes. Payments that the Company may be required to make to the Selling Stockholders include interest on the Notes and contingent fees for failure to perform under the Purchase Agreement. Dollar amounts for interest and contingent fees are not estimable. The dollar amount we pay in interest depends on how long the Notes are held and whether Note holders opt to receive interest in cash or in kind. The dollar amount we pay for the 2% fee for failure to obtain and maintain registration statement effectiveness and the 1.5% fee for failure to timely convert the Notes depends on whether or not we fail to perform and the length of time during which the failure continues.

The following tables set forth certain information regarding the hypothetical profit the Selling Stockholders could realize as a result of the conversion discount for the securities underlying the Notes and the proceeds to the Company. These tables are based on the stock price on the date of sale of the Notes. Actual prices at which the Selling Stockholders may sell shares may be greater or lesser than this price. Additionally, the following tables are based on the total shares potentially issuable under the Notes through the maturity date in May 2021.

Market price per share on date of sale of the Notes	$0.23
Conversion price per share on date of sale of the Notes	$0.04
Total number of shares underlying the Notes	271,221,610(1)
Combined market price of total number of shares	$62,380,970
Combined conversion price of the total number of shares underlying the Notes	$10,848,864
Total possible discount to market price as of date of sale of notes	$51,532,106(2)

(1) Assumes all Notes held to maturity and all interest paid in kind.

(2) Of the total possible discount, $41,225,685 is allocable to Tang Capital Partners, LP and $10,306,421 is allocable to the Baker Entities.

Gross proceeds paid or payable to the Company in the Notes transaction	$1,500,000
All payments from the Company to the Selling Stockholders	$65,986
Resulting net proceeds to the Company	$1,434,014
Total hypothetical profit to Selling Stockholders as a result of conversion discounts for the securities underlying the Notes	$51,532,106(1)
Total possible payments plus total hypothetical profit to Selling Stockholders as a result of conversion discounts as a percentage of the net proceeds to the Company from the sale of the Notes over the 10-year term of the Notes	3598%(2)

(1) Based on the market price per share on the date of the sale of the Notes.

(2) The hypothetical yearly average over the 10-year term of the Notes is 360%.

The following table sets forth certain information regarding a transaction between the Company and the Selling Stockholders from October 19, 2009 (the "Prior Transaction"), which is the only previous securities transaction directly between the Company and the Selling Stockholders:

Total shares outstanding prior to the Prior Transaction	31,379,640(1)
Shares outstanding prior to the Prior Transaction that were held by persons other than the Selling Stockholders	19,713,307
Number of shares that were issued or issuable in connection with the Prior Transaction	9,630,679
Percentage of total issued & outstanding that were issuable in the Prior Transaction (assuming full issuance) calculated by taking the number of shares outstanding prior to the Prior Transaction and held by persons other than the Selling Stockholders and dividing that number by the number of shares that were issued or issuable in connection with the Prior Transaction.	205%
Market price per share immediately prior to the Prior Transaction	$0.82(2)
Current market price per share of the shares subject to the transaction	$0.13(3)

(1) As of September 30, 2009.

(2) As of October 16, 2009.

(3) As of June 8, 2011.

The following table sets forth certain information regarding ownership of our shares and prior registration statements related to the Selling Stockholders:

Shares outstanding prior to the Notes transaction that were held by persons other than the Selling Stockholders	21,881,633
Number of shares registered for resale by the Selling Stockholders and their affiliates in prior registration statements	9,630,679
Tang Capital Partners, LP	3,664,771
Baker Entities	5,965,908
Number of shares registered for resale in prior registration statements by Selling Stockholders that continue to be held	9,630,679
Tang Capital Partners, LP	3,664,771
Baker Entities	5,965,908
Number of shares that have been sold in prior registered resale transactions by Selling Stockholders	0
Tang Capital Partners, LP	0
Baker Entities	0
Number of shares registered for resale in the current transaction	271,221,610
Tang Capital Partners, LP	216,977,288
Baker Entities	54,244,322

PLAN OF DISTRIBUTION

The Shares offered by this prospectus may be sold by the Selling Stockholders. Such sales may be made at fixed prices that may be changed, at market prices prevailing at the time of sale, at prices related to such prevailing market prices, or at negotiated prices, and may be made in the over-the-counter market or any exchange on which our Common Stock may then be listed, or otherwise. In addition, the Selling Stockholders may sell some or all of the Shares through:

- a block trade in which a broker-dealer may resell a portion of the block, as principal, in order to facilitate the transaction;
- purchases by a broker-dealer, as principal, and resale by the broker-dealer for its account;
- ordinary brokerage transactions and transactions in which a broker solicits purchasers;
- in negotiated transactions;
- in a combination of any of the above methods of sale; or
- any other method permitted under applicable law.

The Selling Stockholders may also engage in short sales against the box, puts and calls and other hedging transactions in the Shares or derivatives of the Shares and may sell or deliver the Shares in connection with these trades. For example, the Selling Stockholders may:

- enter into transactions involving short sales of our Common Stock by broker-dealers;
- sell our Common Stock short themselves and redeliver any portion of the Shares to close out their short positions;
- enter into option or other types of transactions that require the Selling Stockholder to deliver Shares to a broker-dealer, who will then resell or transfer the Shares under this prospectus; or
- loan or pledge Shares to a broker-dealer, who may sell the loaned Shares or, in the event of default, sell the pledged Shares.

There is no assurance that any of the Selling Stockholders will sell any or all of the Shares offered by them.

The Selling Stockholders may negotiate and pay broker-dealers commissions, discounts or concessions for their services. Broker-dealers engaged by the Selling Stockholders may allow other broker-dealers to participate in resales. However, the Selling Stockholders and any broker-dealers involved in the sale or resale of our common stock may qualify as “underwriters” within the meaning of the Section 2(a)(11) of the Securities Act. In addition, the broker-dealers’ commissions, discounts or concessions may qualify as underwriters’ compensation under the Securities Act. If any of the Selling Stockholders are deemed to be “underwriters,” then such stockholder(s) will be subject to the prospectus delivery requirements of the Securities Act.

In addition to selling the Shares under this prospectus, the Selling Stockholders may:

- transfer their Common Stock in other ways not involving market makers or established trading markets, including, but not limited to, directly by gift, distribution, privately negotiated transactions in compliance with applicable law or other transfer; or
- sell their Common Stock under Rule 144 of the Securities Act rather than under this prospectus, if the transaction meets the requirements of Rule 144. Each Selling Stockholder will bear all expenses with respect to the offering of Common Stock by such Selling Stockholder.

Each Selling Stockholder will be subject to the applicable provisions of the Exchange Act and the associated rules and regulations under the Exchange Act, including Regulation M, which provisions may limit the timing of purchases and sales of shares of our Common Stock by the Selling Stockholders.

The Selling Stockholders may from time to time pledge or grant a security interest in some or all of the Shares owned by them and, if they default in the performance of their secured obligations, the pledges or secured parties may offer and sell the shares from time to time under this prospectus after an amendment has been filed under Rule 424(b) or other applicable provision of the Securities Act amending the list of Selling Stockholders to include the pledge, transferee or other successors in interest as "Selling Stockholders" under this prospectus.

The Selling Stockholders also may transfer the Shares in other circumstances, in which case the respective pledgees, donees, transferees or other successors in interest may be the selling beneficial owners for purposes of this prospectus and may sell such Shares from time to time under this prospectus after an amendment or supplement has been filed under Rule 424(b) or other applicable provision of the Securities Act amending or supplementing the list of Selling Stockholders to include the pledge, transferee or other successors in interest as "Selling Stockholders" under this prospectus.

We will make copies of this prospectus available to the Selling Stockholders and have informed them of the need to deliver copies of this prospectus to purchasers at or prior to the time of any sale of the Shares.

We will bear all costs, expenses and fees in connection with the registration of the Shares. The Selling Stockholders will bear all commissions and discounts, if any, attributable to the resale of the Shares. The Selling Stockholders may agree to indemnify any broker-dealer or agent that participates in transactions involving sales of the Shares against certain liabilities, including liabilities arising under the Securities Act.

We have agreed to indemnify the Selling Stockholders against liabilities, including liabilities under the Securities Act, the Exchange Act and state securities laws, relating to the registration of the Shares offered by this prospectus.

DESCRIPTION OF SECURITIES TO BE REGISTERED

As of the date of this prospectus, our authorized capital stock consists of 100,000,000 shares of Common Stock, $0.01 par value per share, and 2,500,000 shares of preferred stock, $0.01 par value per share. We are currently seeking stockholder approval at our 2011 Annual Meeting of Stockholders, to be held on June 29, 2011, to increase our authorized number of shares of common stock to a total of 1,500,000,000; until we increase our total authorized common stock, we do not have enough authorized common stock to allow the Notes to be fully converted. The Notes may not be converted, and the shares registered by this prospectus may not be issued, until we effect an increase in our authorized shares.

Common Stock

The holders of common stock have one vote for each share on all matters submitted to a vote of the stockholders. Subject to preferences that may be applicable to any outstanding preferred stock, holders of common stock will receive ratably any dividends declared by the board of directors out of funds legally available for payment of dividends. In the event of a liquidation, dissolution or winding up of the company, holders of common stock will share ratably in all assets remaining after payment of liabilities and the liquidation preference of any outstanding preferred stock. Holders of common stock have no preemptive rights, no right to convert their common stock into any other securities, and no right to vote cumulatively for the election of directors. The outstanding shares of common stock are fully paid and non-assessable.

We have not paid cash dividends on our common stock and do not plan to pay any such dividends in the foreseeable future.

Certificate of Incorporation

Under our Certificate of Incorporation, as amended, our Board of Directors, without further action by our stockholders, currently has the authority to issue up to 2,500,000 shares of preferred stock and to fix the rights (including voting rights), preferences and privileges of these "blank check" preferred shares. Such preferred stock may have rights, including economic rights, senior to our Common Stock. As a result, the issuance of the preferred stock could have a material adverse effect on the price of our Common Stock and could make it more difficult for a third party to acquire a majority of our outstanding Common Stock.

Delaware Anti-Takeover Law and Charter and Bylaw Provisions

Amended and Restated Certificate of Incorporation and Bylaws

Some provisions of Delaware law and our amended and restated certificate of incorporation and bylaws contain provisions that could make the following transactions more difficult:

- acquisition of us by means of a tender offer;
- acquisition of us by means of a proxy contest or otherwise; or
- removal of our incumbent officers and directors.

The provisions, summarized below, are intended to discourage coercive takeover practices and inadequate takeover bids and to promote stability in our management. These provisions are also designed to encourage persons seeking to acquire control of us to first negotiate with our board of directors.

Undesignated Preferred Stock

The ability to authorize undesignated preferred stock makes it possible for our board of directors to issue one or more series of preferred stock with voting or other rights or preferences that could impede the success of any attempt to change control of us. These and other provisions may have the effect of deferring hostile takeovers or delaying changes in control or management of our company.

Delaware Anti-Takeover Statute

We are subject to Section 203 of the General Corporation Law of the State of Delaware. This law prohibits a publicly held Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years following the date that the stockholder became an interested stockholder unless:

- prior to the date of the transaction, the board of directors of the corporation approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;
- upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the number of shares outstanding those shares owned by persons who are directors and also officers and by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- on or subsequent to the date of the transaction, the business combination is approved by the board of directors and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least two-thirds of the outstanding voting stock which is not owned by the interested stockholder.

Section 203 defines “business combination” to include:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition of 10% or more of our assets involving the interested stockholder;
- in general, any transaction that results in the issuance or transfer by us of any of our stock to the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

In general, Section 203 defines an “interested stockholder” as an entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person affiliated with or controlling or controlled by the entity or person.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Computershare Trust Company N.A.

Quotation

Our common stock is quoted on the OTCQB Market under the symbol “APPA.PK”.

LEGAL MATTERS

Certain legal matters relating to the validity of the Shares offered by this prospectus will be passed upon for us by Ropes & Gray LLP, San Francisco, California.

EXPERTS

Odenberg, Ullakko, Muranishi & Co. LLP, independent registered public accounting firm, has audited our financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2010, as set forth in their report, which is incorporated by reference in this prospectus and elsewhere in the registration statement. Our financial statements are incorporated by reference in reliance on Odenberg, Ullakko, Muranishi & Co. LLP's report, given on their authority as experts in accounting and auditing.

INFORMATION WITH RESPECT TO THE REGISTRANT

A substantial portion of the information required to be disclosed in the registration statement of which this prospectus is a part is incorporated by reference to our latest report on Form 10-K and subsequent reports filed with the SEC. See "Information Incorporated by Reference," "Prospectus Summary," and "Risk Factors."

MATE RIAL CHANGES

There have been no material changes since December 31, 2010 that have not been described in our Annual Report on Form 10-K, as amended, our Quarterly Report on Form 10-Q, our Definitive Proxy Statement on Schedule 14-A, this prospectus or our Current Reports on Form 8-K filed prior to the date of this prospectus, which are incorporated by reference herein.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

The Company files annual, quarterly and special reports, proxy statements and other information with the SEC. You may read and copy any document filed by the Company at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the public reference room. The Company's filings with the SEC are also available to the public at the SEC's Internet web site at *http://www.sec.gov*. You may also read and copy this information at the National Association of Securities Dealers, Inc., 1735 K Street, N.W., Washington, D.C. 20006.

The Company has filed a registration statement, of which this prospectus is a part, covering the Shares offered hereby. As allowed by Commission rules, this prospectus does not include all of the information contained in the registration statement and the included exhibits, financial statements and schedules. You are referred to the registration statement, the included exhibits, financial statements and schedules for further information. This prospectus is qualified in its entirety by such other information.

INFORMATION INCORPORATED BY REFERENCE

The SEC allows the Company to "incorporate by reference" the information that is filed by the Company with the SEC, which means that the Company can disclose important information to you by referring you to those documents. The documents incorporated by reference are:

1. The Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2010, filed with the SEC on March 28, 2011, as amended on May 2, 2011;
2. The Company's Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2011, filed with the SEC on May 16, 2011;
3. The Company's Current Reports on Form 8-K, filed with the SEC on February 9, 2011, February 28, 2011, April 4, 2011, April 19, 2011, April 28, 2011, May 31, 2011 and June 2, 2011; and
4. The Company's Definitive Proxy Statement on Schedule 14-A, filed with the SEC on June 3, 2011.

The Company will provide, without charge, to each person, including any beneficial owner, to whom a copy of this prospectus is delivered, upon such person's written or oral request, a copy of any and all of the information incorporated by reference in this prospectus, other than exhibits to such documents, unless such exhibits are specifically incorporated by reference into the information that this prospectus incorporates. Requests should be directed to the Secretary at A.P. Pharma, Inc., 123 Saginaw Drive, Redwood City, California 94063, telephone number (650) 366-2626. You may also find these documents in the "Investor Relations" section of our website, www.appharma.com. The information on our website is not incorporated into this prospectus.

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution.

The following table sets forth the costs and expenses, payable by the Company in connection with the registration and sale of the Common Stock being registered. All amounts are estimates except the SEC registration fee.

	Amount to be paid
SEC registration fee	$6,455
Printing expense	5,000
Legal fees and expenses	10,000
Accounting fees and expenses	5,000
Transfer Agent Fees	2,500
Miscellaneous Fees	5,000
Total	$33,955

Item 14. Indemnification of Directors and Officers.

The Registrant has the power to indemnify its officers and directors against liability for certain acts pursuant to Section 145 of the General Corporation Law of the State of Delaware. Section B of Article VI of the Registrant's Certificate of Incorporation provides:

"(1) Right to Indemnification. Each person who was or is made a party or is threatened to be made a party to or is involved in any action, suit or proceeding, whether civil, criminal, administrative or investigative (hereinafter a "proceeding"), by reason of the fact that he or she, or a person of whom he or she is the legal representative, is or was a director or officer, of the Corporation or is or was serving at the request of the Corporation, as a director, officer, employee or agent of another corporation or of a partnership, joint venture, trust or other enterprise, including service with respect to employee benefit plans, whether the basis of such proceeding is alleged action in an official capacity as a director, officer, employee or agent or in any other capacity while serving as a director, officer, employee or agent, shall be indemnified and held harmless by the Corporation to the fullest extent authorized by the General Corporation Law of the State of Delaware, as the same exists or may hereafter be amended (but, in the case of any such amendment, only to the extent that such amendment permits the Corporation to provide broader indemnification rights than said law permitted the Corporation to provide prior to such amendment), against all expense, liability and loss (including attorneys' fees, judgments, fines, ERISA excise taxes or penalties and amounts paid or to be paid in settlement) reasonably incurred or suffered by such person in connection therewith and such indemnification shall continue as to a person who has ceased to be a director, officer, employee or agent and shall inure to the benefit of his or her heirs, executors and administrators; provided, however, that, the Corporation shall indemnify any such person seeking indemnification in connection with a proceeding (or part thereof) initiated by such person only if such proceeding (or part thereof) was authorized by the board of directors of the Corporation. The right to indemnification conferred in this Section B shall be a contract right and shall include the right to be paid by the Corporation the expenses incurred in defending any such proceeding in advance of its final disposition; provided, however, that, if the General Corporation Law of the State of Delaware requires, the payment of such expenses incurred by a director or officer in his or her capacity as a director or officer (and not in any other capacity in which service was or is rendered by such person while a director or officer, including, without limitation, service to an employee benefit plan) in advance of the final disposition of a proceeding, shall be made only upon delivery to the Corporation of an undertaking, by or on behalf of such director or officer, to repay all amounts so advanced if it shall ultimately be determined that such director or officer is not entitled to be indemnified under this Section or otherwise. The Corporation may, by action of its Board of Directors, provide indemnification to employees and agents of the Corporation with the same scope and effect as the foregoing indemnification of directors and officers.

(2) Non-Exclusivity of Rights. The right to indemnification and the payment of expenses incurred in defending a proceeding in advance of its final disposition conferred in this Section B shall not be exclusive of any other rights which any person may have or hereafter acquire under any statute, provisions of this Certificate of Incorporation, Bylaw, agreement, vote of stockholders or disinterested directors or otherwise.

(3) Insurance. The Corporation may maintain insurance, at its expense, to protect itself and any director, officer, employee or agent of the Corporation or another corporation, partnership, joint venture, trust or other enterprise against any such expense, liability or loss, whether or not the Corporation would have the power to indemnify such person against such expense, liability or loss under Delaware General Corporation Law."

The Registrant has obtained a liability insurance policy for the officers and directors that, subject to certain limitations, terms and conditions, will insure them against losses arising from wrongful acts (as defined by the policy) in their capacity as directors and officers.

In addition, the Registrant has entered into agreements to indemnify its directors and certain officers in addition to the indemnification provided for in the Certificate of Incorporation and Bylaws. These agreements, among other things, indemnify the Registrant's directors and certain of its officers for certain expenses (including attorneys fees), judgments, fines and settlement amounts incurred by such person in any action or proceeding, including any action by or in the right of the Registrant, on account of services as a director or officer of the Registrant or as a director or officer, of any subsidiary of the Registrant, or as a director or officer of any other company or enterprise that the person provides services to at the request of the Registrant

Item 15. Recent Sales of Unregistered Securities

On April 24, 2011, A.P. Pharma, Inc. (the "Company") entered into a Securities Purchase Agreement (the "Purchase Agreement") with the purchasers named therein (the "Purchasers"). Pursuant to the Purchase Agreement, the Company may issue up to $4.5 million in aggregate principal amount of Senior Secured Convertible Notes due 2021 (the "Notes"), which are convertible into shares (the "Conversion Shares") of the Company's common stock, par value $0.01, at a rate of 25,000 shares per $1,000 of principal or interest being converted. The Company received $1.5 million before expenses at an initial closing that occurred on May 2, 2011 (the "Initial Closing Date"). The Purchasers may also purchase up to an additional $3.0 million aggregate principal amount of Notes from time to time, with such right expiring upon the second anniversary of the Initial Closing Date. The financing was exempt from registration pursuant to the exemption for transactions by an issuer not involving any public offering under Section 4(2) the Securities Act of 1933, as amended (the "Securities Act"), and Rule 506 of Regulation D under the Securities Act.

Item 16. Exhibits.

See Exhibit Index set forth on page 17 to this Registration Statement.

Item 17. Undertakings.

The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement.

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser: each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness; *provided*, *however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers, and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the Company certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-1 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Redwood City, State of California, on June 13, 2011.

A.P. Pharma, Inc.

By: /s/ John B. Whelan
John B. Whelan
President, Chief Executive Officer and Chief Financial Officer

Pursuant to the requirements of the Securities Act of 1933, as amended, this registration statement on Form S-1 has been signed by the following persons in the capacities and on the dates indicated.

Signature	Office(s)	Date
/s/ John B. Whelan **John B. Whelan**	President, Chief Executive Officer and Chief Financial Officer, Director (Principal Executive Officer and Principal Financial and Accounting Officer)	June 13, 2011
* **Paul Goddard**	Chairman of the Board of Directors	June 13, 2011
* **Kevin C. Tang**	Director	June 13, 2011
* **Gregory Turnbull**	Director	June 13, 2011

*By: /s/ John B. Whelan
John B. Whelan
Attorney-in-Fact

Table of Contents

EXHIBIT INDEX

Exhibit Number	Document Description

2.1 – Copy of Asset Purchase Agreement between Registrant and RP Scherer South, Inc. dated June 21, 2000.(1)
3-A – Copy of Registrant's Certificate of Amendment of Certificate of Incorporation.(2)
3-B – Copy of Registrant's Bylaws.(3)
3-C – Copy of Registrant's Certificate of Designation.(4)
4-A – Copy of Registrant's Preferred Shares Rights Agreement.(5)
4-B – Copy of Registrant's Form of Rights Certificate.(6)
4-C – First Amendment to Registrant's Preferred Shares Rights Agreement.(7)
4-D – Copy of Specimen Common Stock Certificate.(8)
4-F – Form of Senior Secured Convertible Note Due 2021. (31)
5.1 – Opinion of Ropes & Gray LLP†
10-C – Registrant's 1992 Stock Plan dated August 11, 1992.(9)*
10-D – Registrant's 1997 Employee Stock Purchase Plan, as amended to date. (10)*
10-E – Lease Agreement between Registrant and Metropolitan Life Insurance Company for lease of Registrant's executive offices in Redwood City dated as of November 17, 1997.(11)
10-F – Registrant's 2002 Equity Incentive Plan dated June 13, 2002.(12)*
10-G – Agreement between Registrant and RHEI Pharmaceuticals, Inc. (RHEI) granting exclusive license to RHEI to develop and sell APF530 in Greater China dated October 1, 2006.(13)
10-H – Royalty Interest Agreement between Registrant and Paul Royalty Fund dated January 18, 2006.(14)
10-I – Amended and Restated Retention and Non-Competition Agreement between the Registrant and Michael O'Connell effective August 23, 2007.(15)*
10-J – Management Retention Agreement between the Registrant and Dr. John Barr dated as of November 8, 2007.(16)*
10-K – Registrant's 2007 Equity Incentive Plan.(17)*
10-L – Form of 2007 Equity Incentive Plan Stock Option Agreement.(18)*
10-M – Form of 2007 Equity Incentive Plan Restricted Stock Unit Agreement.(19)*
10-N – Agreement with Johnson & Johnson dated April 14, 1992.(20)
10-O – Form of 2007 Equity Incentive Plan Restricted Stock Award Agreement.(10)*
10-P – Form of 2002 Equity Incentive Plan Stock Option Agreement.(10)*
10-Q – Form of 2002 Equity Incentive Plan Restricted Stock Agreement.(10)*
10-R – Amendment to the Registrant's Non-Qualified Plan.(21)*
10-S – Form of Indemnification Agreement.(10)*
10-T – Registrant's Non-Qualified Plan dated June 13, 2002.(22)*
10-U – Employment Letter Agreement with Ronald Prentki, President and Chief Executive Officer dated July 3, 2008.(23)*
10-V – Amendment to Employment Letter Agreement with Ronald Prentki, President and Chief Executive Officer dated December 30, 2008. (24)*
10-W – Amendment to Management Retention Agreement between the Registrant and Dr. John Barr dated December 23, 2008. (24)*
10-X – Employment Letter Agreement with John B. Whelan, Chief Financial Officer dated as of February 9, 2008. (24)*
10-Y – Development and License Agreement dated as of September 11, 2009, between the Registrant and Merial Limited.(25)

10-Z – Securities Purchase Agreement, dated as of October 19, 2009, by and among the Registrant and the purchasers listed therein.[26]
10-AA – Registration Rights Agreement, dated as of October 22, 2009, by and among the Registrant and the purchasers listed therein.[27]
10-AB – Form of Warrant to Purchase Shares of Common Stock.[28]
10-AC – Second Amendment to Preferred Shares Rights Agreement, dated as of October 20, 2009, by and between the Registrant and Computershare Trust Company N.A.[29]
10-AD – Separation and Release Agreement between Ronald J. Prentki and the Registrant dated May 25, 2010 [30]*
10-AE - Securities Purchase Agreement, dated as of April 24, 2011, by and among the Company and the purchasers listed therein. [32]
10-AF Security Agreement, dated as of April 24, 2011, by and between the Company and Tang Capital Partners, LP, as Agent for the Purchasers. [33]
10-AG - Second Amendment to Lease, effective as of April 1, 2011, by and between the Company and Metropolitan Life Insurance Company. [34]
10-AH - Management Retention Agreement, dated as of April 25, 2011, by and between the Company and John B. Whelan. [35]
10-AI - Management Retention Agreement, dated as of April 25, 2011, by and between the Company and Michael A. Adam. [36]
23.1 – Consent of Independent Registered Public Accounting Firm.
24.1 – Power of Attorney (included on signature page of the initial filing of this Registration Statement on Form S-1, filed with the SEC on May 17, 2011)

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(1) Filed as an Exhibit with corresponding Exhibit No. to Registrant's Form 8-K filed August 9, 2000 (file No. 000-16109), and incorporated herein by reference.
(2) Filed as Exhibit 3.1 to Registrant's Form 10-Q filed August 4, 2009, and incorporated herein by reference.
(3) Filed as an Exhibit with corresponding Exhibit No. to Registrant's Registration Statement on Form S-1 (Registration No. 33-15429) and incorporated herein by reference.
(4) Filed as Exhibit 3.C to Registrant's Form 8-K filed December 19, 2006, and incorporated herein by reference.
(5) Filed as Exhibit 4.A to Registrant's Form 8-K filed December 19, 2006, and incorporated herein by reference.
(6) Filed as Exhibit 4.B to Registrant's Form 8-K filed December 19, 2006, and incorporated herein by reference.
(7) Filed as Exhibit 4.1 to Registrant's Form 8-K filed October 7, 2008, and incorporated herein by reference.
(8) Filed as Exhibit 4.1 to Registrant's Registration Statement on Form S-3 (Registration No. 333-162968) filed November 6, 2009, and incorporated herein by reference.
(9) Filed as Exhibit No. 28.1 to Registrant's Registration Statement on Form S-8 (Registration No. 33-50640), and incorporated herein by reference.
(10) Filed as an Exhibit with corresponding Exhibit No. to Registrant's Annual Report on Form 10-K for the year ended December 31, 2007, and incorporated herein by reference.
(11) Filed as an Exhibit with corresponding Exhibit No. to Registrant's Annual Report on Form 10-K for the year ended December 31, 1997, and incorporated herein by reference.
(12) Filed as Exhibit No. 99.1 to Registrant's Registration Statement on Form S-8 (Registration No. 333-90428), and incorporated herein by reference.
(13) Filed as Exhibit 10.AA to Registrant's Form 10-Q filed November 7, 2006, and incorporated herein by reference.
(14) Filed as Exhibit 10-Y to Registrant's Form 10-Q filed May 15, 2006, and incorporated herein by reference.
(15) Filed as Exhibit 10.14 to the Registrant's Form 10-Q filed November 14, 2007 and incorporated herein by reference.

(16) Filed as Exhibit 10.15 to the Registrant's Form 10-Q filed November 14, 2007 and incorporated herein by reference.
(17) Filed as Exhibit No 4.1 to Registrant's Registration Statement on Form S-8 (Registration No. 333-148660) and incorporated herein by reference.
(18) Filed as Exhibit no. 4.3 to Registrant's Registration Statement on Form S-8 (Registration No 333-148660) and incorporated herein by reference.
(19) Filed as Exhibit No 4.4 to Registrant's Registration Statement on Form S-8 (Registration No. 333-148660), and incorporated herein by reference.
(20) Filed as an Exhibit with corresponding Exhibit No. to Registrant's Annual Report on Form 10-K for the year ended December 31, 1992, and incorporated herein by reference.
(21) Filed as Exhibit 10.16 to the Registrant's Form 10-Q dated November 14, 2007 and incorporated herein by reference.
(22) Filed as Exhibit No. 99.2 to Registrant's Registration Statement on Form S-8 (Registration No. 333-90428), and incorporated herein by reference.
(23) Filed as an Exhibit with corresponding Exhibit No. to the Registrant's Form 10-Q filed August 14, 2008, and incorporated herein by reference.
(24) Filed as an Exhibit with corresponding Exhibit No. to Registrant's Annual Report on Form 10-K filed March 30, 2009, and incorporated herein by reference.
(25) Filed as Exhibit 10.1 to the Registrant's Form 10-Q filed November 16, 2009 and incorporated herein by reference.
(26) Filed as Exhibit 10.1 to the Registrant's Form 8-K filed on October 22, 2009 and incorporated herein by reference.
(27) Filed as Exhibit 10.2 to the Registrant's Form 8-K filed on October 22, 2009 and incorporated herein by reference.
(28) Filed as Exhibit 10.3 to the Registrant's Form 8-K filed on October 22, 2009 and incorporated herein by reference.
(29) Filed as Exhibit 10.4 to the Registrant's Form 8-K filed on October 22, 2009 and incorporated herein by reference.
(30) Filed as Exhibit 10.1 to the Registrant's Form 8-K filed on June 1, 2010 and incorporated herein by reference.
(31) Filed as Exhibit 10.2 to the Registrant's Form 8-K filed on April 28, 2011 and incorporated herein by reference.
(32) Filed as Exhibit 10.1 to the Registrant's Form 8-K filed on April 28, 2011 and incorporated herein by reference.
(33) Filed as Exhibit 10.3 to the Registrant's Form 8-K filed on April 28, 2011 and incorporated herein by reference.
(34) Filed as Exhibit 10.4 to the Registrant's Form 8-K filed on April 28, 2011 and incorporated herein by reference.
(35) Filed as Exhibit 10.5 to the Registrant's Form 8-K filed on April 28, 2011 and incorporated herein by reference.
(36) Filed as Exhibit 10.6 to the Registrant's Form 8-K filed on April 28, 2011 and incorporated herein by reference.
† To be filed with a subsequent pre-effective amendment.
* Management contract or compensatory plans.

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in this Amendment No. 1 to Registration Statement on Form S-1 (No. 333-174288) and the related Prospectus of our report dated March 23, 2011 relating to the financial statements of A.P. Pharma, Inc. included in its Annual Report on Form 10-K for the year ended December 31, 2010, filed with the Securities and Exchange Commission.

We also consent to the reference to us under the heading “Experts” in such Amendment No. 1 to Registration Statement on Form S-1.

/s/ ODENBERG, ULLAKKO, MURANISHI & CO. LLP

San Francisco, California
June 10, 2011

A.P. Pharma, Inc.
123 Saginaw Drive
Redwood City, CA 94063

June 13, 2011

VIA EDGAR

Securities and Exchange Commission
Division of Corporation Finance
100 F Street, N.E.
Washington, D.C. 20549-4628

Attention: Jeffrey Riedler
Johnny Gharib
Daniel Greenspan

Re: A.P. Pharma, Inc.
Registration Statement on Form S-1
Filed May 17, 2011
File No. 333-174288

Ladies and Gentlemen:

Set forth below is the response of A.P. Pharma, Inc., a Delaware corporation (the "Company"), to the comment letter, dated May 31, 2011 (the "Comment Letter"), of the staff of the Division of Corporation Finance (the "Staff") of the Securities and Exchange Commission (the "Commission") to the Company's registration statement on Form S-1 (File No. 333-174288) (the "Registration Statement"). The Registration Statement was filed with the Commission on May 17, 2011. Concurrently herewith, the Company has filed Amendment No. 1 to the Registration Statement ("Amendment No. 1") incorporating the revisions described in this letter.

For reference purposes, the Staff's comments as reflected in the Comment Letter are reproduced in bold and the corresponding responses of the Company are shown below the comments.

1. **We note that you are registering the sale of 271,221,610 shares. Given the size of the offering under this registration statement relative to the number of shares outstanding held by non-affiliates, the nature of the offering and the total amount of shares being sold by the selling security holders, the transaction appears to be a primary offering. Accordingly, because you are not eligible to conduct a primary at-the-market offering under Rule 415(a)(4), the shares offered must be at a fixed price. In addition you must:**

    - **File a new registration statement for the resale offering at the time of each conversion of convertible notes because you are not eligible to conduct the offering on a delayed or continuous basis under Rule 415(a)(1)(x);**

- **Identify the selling stockholders as underwriters in the registration statement; and**
- **Include the price at which the underwriters will sell the securities.**

If you disagree with our analysis, please advise the staff of the company's basis for determining that the transaction is appropriately characterized as a transaction that is eligible to be made under Rule 415(a)(1)(i). In your analysis, please address the following among any other relevant factors:

- **The date on which and the manner in which each selling stockholder received the shares and/or the overlying securities;**
- **The relationship of each selling stockholder with the company, including an analysis of whether the selling stockholder is an affiliate of the company;**
- **Any relationships among the selling stockholders;**
- **The dollar value of the shares registered in relation to the proceeds that the company received from the selling stockholders for the securities, excluding amounts of proceeds that were returned (or will be returned) to the selling stockholders and/or their affiliates in fees or other payments;**
- **The discount at which the stockholders will purchase the common stock underlying the convertible notes (or any related security, such as a warrant or option) upon conversion or exercise; and**
- **Whether or not any of the selling stockholders is in the business of buying and selling securities.**

RESPONSE TO COMMENT 1

For the reasons set forth below, the Company respectfully submits that the offering to be registered pursuant to the Registration Statement is a valid secondary offering and may be registered as contemplated by the Registration Statement, and that the selling stockholders are not "underwriters" within the meaning of Section 2(a)(11) of the Securities Act of 1933, as amended (the "Act").

Background

On April 24, 2011, the Company entered into a Purchase Agreement (the "Purchase Agreement") with the selling stockholders identified in the Registration Statement, all of whom are accredited investors (the selling stockholders, grouped by their affiliates, are referred to herein as the "Investors"), for the sale of $1.5 million of Senior Secured Convertible Notes (the "Notes"). This financing transaction pursuant to which the Notes were offered and sold is referred to below as the "Financing."

The Notes were issued pursuant to the exemption from registration provided by Section 4(2) of the Act and Regulation D promulgated thereunder. In the Purchase Agreement, the Investors made certain representations and warranties regarding their investment intent, including representations that they were purchasing their securities for their own accounts, for investment purposes and not for the purpose of effecting any distribution of the securities in violation of the Act.

Note Conversion Features

The Notes are convertible into common stock, par value $0.01 per share, (the "Common Stock") at a rate of 25,000 shares for every $1,000 of principal and/or accrued interest that is being converted. The number of shares of Common Stock issuable upon the conversion of the Notes is only subject to adjustment in the event of a stock split, reverse stock split or similar recapitalization event. In no event is the conversion price for the Notes subject to adjustment based on future issuances of capital stock by the Company (i.e., there are no anti-dilution features in the Notes).

At present, the Notes are not convertible at all due to the existence of a "blocker" provision contained in the Notes. This blocker prevents the exercise of the Notes if the holder would, after conversion, beneficially own more than 9.99% of the Company's issued and outstanding Common Stock. Because both of the Investors currently beneficially own substantially more than 10% of the Company's outstanding Common Stock, the Notes currently may not be converted at all unless the blocker is reset or waived (which requires at least 61 days prior written notice to the Company) or the Investors lower their beneficial ownership as a percent of our outstanding shares (e.g., through a sale of stock, which would take a substantial amount of time based on our average daily trading volume, as described below).

Without regard to the blocker, the Notes, at the time of issuance, could have been converted into an aggregate of 37.5 million shares of Common Stock (the "Conversion Shares"). The number of Conversion Shares can grow substantially over the 10-year term of the Notes due to the potential interest payable under the Notes. Specifically, if: (a) the Notes remain outstanding through the maturity date in May 2021, and (b) all interest payments due over the 10-year term of the Notes are paid in-kind, then the Notes would, at maturity, be convertible into a total of 271.2 million shares of Common Stock (subject to the blocker provision). This 271.2 million share figure is the number of shares being registered under the Registration Statement (i.e., the Investors have asked to have the entire amount that could be issued over 10 years included in the Registration Statement).

Not a "Toxic" Financing

The terms of the Financing do not include any price "re-sets", floating price conversion rights or other "toxic" features that have prompted the Staff's concerns regarding "Extreme Convertible" transactions. The Notes do not contain any adjustment mechanism, including anti-dilution adjustments, other than customary adjustments that would apply in the case of a stock split, reverse stock split and similar recapitalization event. Based on prior guidance provided by senior members of the Staff, we believe that the absence of any adjustment mechanisms would not raise concerns among the Staff with respect to the Staff's interpretation of Rule 415.

History of Prior Investment

Prior to the Financing, the Investors already had significant ownership positions in the Company, beneficially holding 26% and 17% of the Company's outstanding Common Stock, respectively. One of the Investors initially invested in the Company in June 2007 and the other initially invested in August 2008. Since these initial investments, the Investors have purchased additional shares of Common Stock, including in a PIPE financing in 2009, and then again most recently investing in the Company through the Financing. Since the time that the Investors acquired their initial 5% ownership stakes in the Company and were required to report their holdings on Schedule 13D/13G, they have not, to our knowledge, sold any shares of Common Stock. We believe that this pattern of buying and holding demonstrates that the Investors did not purchase the Notes with the aim of engaging in a distribution and thereby acting as underwriters.

Both of the selling stockholders are subject to Section 16 reporting and short-swing profit rules and Tang Capital has a representative, Kevin Tang, serving on the Company's Board of Directors.

Rule 415 Analysis

In 1983 the Commission adopted Rule 415 under the Act to permit the registration of offerings to be made on a delayed or continuous basis. Rule 415 specifies certain conditions that must be met by an issuer in order to avail itself of the Rule. In relevant part, Rule 415 provides:

> "(a) Securities may be registered for an offering to be made on a continuous or delayed basis in the future, Provided, That:
>
> (1) The registration statement pertains only to:
>
> (i) Securities which are to be offered or sold solely by or on behalf of a person or persons other than the registrant, a subsidiary of the registrant or a person of which the registrant is a subsidiary;...[or]
>
> (x) Securities registered (or qualified to be registered) on Form S–3 or Form F–3 (§239.13 or §239.33 of this chapter) which are to be offered and sold on an immediate, continuous or delayed basis by or on behalf of the registrant, a majority-owned subsidiary of the registrant or a person of which the registrant is a majority-owned subsidiary...."

Under Rule 415(a)(1)(i), an issuer may register shares to be sold on a delayed or continuous basis by selling stockholders in a bona fide secondary offering without restriction.

In the event that an offering registered in reliance on Rule 415(a)(1)(i) is deemed to be an offering that is "by or on behalf of the registrant" as specified in Rule 415(a)(1)(x), Rule 415 contains additional limitations. Rule 415(a)(4) provides that

> "In the case of a registration statement pertaining to an at the market offering of equity securities by or on behalf of the registrant, the offering must come within paragraph (a)(1)(x) of this section. As used in this paragraph, the term 'at the market offering' means an offering of equity securities into an existing trading market for outstanding shares of the same class at other than a fixed price."

As a result, if an offering which purports to be a secondary offering is characterized as an offering "by or on behalf of the registrant," Rule 415 is only available to register an "at the market offering" if the registrant is eligible to use Form S-3 or Form F-3 to register a primary offering.

In the event that the offering registered by the Registration Statement is recharacterized as a primary offering on behalf of the Company: (i) the offering would have to be made on a fixed price basis (in other words, the Investors would not be able to sell their securities at prevailing market prices) unless the Company is eligible to use Form S-3 for a primary offering, (ii) the Investors would be deemed to be "underwriters" with respect to the Financing (with the attendant liabilities under Section 11 of the Act), and (iii) in accordance with the Staff's long-standing interpretive position, Rule 144 would never be available to them to effect resales of their securities.

Because of the requirements of Rule 415, the Staff's interpretation of Rule 415 has a significant impact on the ability of a selling stockholder to effect the resale of its securities. Because recharacterizing the offering as "by or on behalf of the registrant" has such a significant impact, and a mischaracterization can have a chilling effect on the ability of smaller public companies, such as ours, to raise capital, we respectfully submit that the Staff should only recharacterize a secondary offering as being on behalf of a registrant after a review of the relevant facts and circumstances, including the factors set forth in Interpretation 214.02 (the "Interpretation") from the Staff's Compliance and Disclosure Interpretations, which states that:

> "It is important to identify whether a purported secondary offering is really a primary offering, i.e., the selling stockholders are actually underwriters selling on behalf of an issuer. Underwriter status may involve additional disclosure, including an acknowledgment of the seller's prospectus delivery requirements. In an offering involving Rule 415 or Form S-3, if the offering is deemed to be on behalf of the issuer, the Rule and Form in some cases will be unavailable (e.g., because of the Form S-3 'public float' test for a primary offering, or because Rule 415 (a)(l)(i) is available for secondary offerings, but primary offerings must meet the requirements of one of the other subsections of Rule 415). The question of whether an offering styled a secondary one is really on behalf of the issuer is a difficult factual one, not merely a question of who receives the proceeds. Consideration should be given to how long the selling stockholders have held the shares, the circumstances under which they received them, their relationship to the issuer, the amount of shares involved, whether the sellers are in the business of underwriting securities, and finally, whether under all the circumstances it appears that the seller is acting as a conduit for the issuer." (emphasis added)

As the Interpretation indicates, the question is a “difficult” and “factual” one that involves an analysis of many factors and “all the circumstances.”

Each of the relevant factors listed in the Interpretation is discussed below in the context of the Financing. In our view, based on a proper consideration of all of those factors, we believe that the Staff should conclude that the Registration Statement does relate to a valid secondary offering and that all of the shares of Common Stock potentially issuable under the Notes can be registered for sale on behalf of the Investors pursuant to Rule 415.

How Long the Selling Stockholders Have Held the Shares

Presumably, the longer shares are held, the less likely it is that the selling stockholders are acting as a mere conduit for the Company. Here, the Investors have now held the shares (including the holding period for Notes, for which “tacking” would be permitted under Rule 144) for 42 days as of the date of this letter. Additionally, because the Investors hold well in excess of 10% of the total outstanding shares, the Notes are not presently convertible due to the “blocker” provision described above (and thus the underlying shares cannot be sold). If an Investor wished to waive the blocker, the earliest time at which the Investor could convert the Notes is 61 days from the date of this letter (assuming no other changes to their holdings), resulting in a minimum holding period prior to conversion and sale of at least 103 days. This holding period is longer than the period required by the Staff for valid “PIPE” transactions.

The Staff’s “PIPEs” interpretation is codified as Interpretation 139.11 (the “PIPEs Interpretation”). The PIPEs Interpretation provides in relevant part that:

> “In a PIPE transaction, a company will be permitted to register the resale of securities prior to their issuance if the company has completed a Section 4(2)-exempt sale of the securities (or in the case of convertible securities, of the convertible security itself) to the investor, and the investor is at market risk at the time of filing of the resale registration statement…. The closing of the private placement of the unissued securities must occur within a short time after the effectiveness of the resale registration statement.”

The PIPEs Interpretation contemplates that a valid secondary offering could occur immediately following the closing of the placement. Because no specific holding period is required for a PIPE transaction to be a valid secondary offering, it would reason that a holding period of more than three months must also be sufficient for a valid secondary offering.

This conclusion comports with longstanding custom and practice in the PIPEs marketplace, where investors require that a registration statement is to be filed shortly after closing (typically 30 days) and declared effective shortly thereafter (typically 90 days after closing). These same time periods apply in the case of the Financing.

The Circumstances Under Which They Received the Shares

As described above, the securities covered by the Registration Statement became issuable in a valid private placement that complied in all respects with the PIPEs Interpretation, Section 4(2) of the Act and Regulation D promulgated thereunder. As noted above, the terms of the Notes contain no "toxic" provisions or other terms that would be expected to merit any special concerns by the Staff. The Investors purchased their securities for investment and specifically represented that they were not acquiring their securities with the purpose or intent of effecting a distribution in violation of the Act. There is no evidence to suggest that those representations are false. Based on reports of recent statements of policy of the Staff relating to Rule 415, we believe that the Financing falls squarely outside the area of Staff concern regarding its interpretation of Rule 415.

We are aware that the Staff may equate the registration of securities with a present intent to distribute these securities. However, we respectively submit that such a perspective is at odds with both market practices and the Staff's own previous interpretive positions, including the PIPEs Interpretation. We also note that such a perspective is inconsistent with the prior practice of the Investors, who currently have a total of approximately 3.5 million shares of Company Common Stock registered for resale on Form S-3 (File No. 333-167890), and since such registration statement was declared effective on July 8, 2010, none of the registered shares have been sold by the Investors or their affiliated funds. In fact, as noted above, the Investors have built up increasingly long positions in the Common Stock over a period of several years.

There are a number of reasons why investors in a PIPE transaction would want shares registered other than to effect an immediate resale. Many private investment funds are required to mark their portfolios to market. If portfolio securities are not registered, such investors are typically required to mark down the book value of those securities to reflect an illiquidity discount. That portfolio valuation does not depend on whether the Investors intend to dispose of their shares or to hold them for an indefinite period. In addition, the Investors are fiduciaries for their limited partners and other investors in their funds. As such, the Investors have a common law duty to act prudently. Accordingly, we understand that they wish to have their securities in a more liquid form, whereas not registering the shares could prevent them from taking advantage of market opportunities or from liquidating their investment if there is a fundamental shift in their investment judgment about the Company. Finally, registered shares of many issuers are eligible to be used as margin collateral under the Federal Reserve's margin regulations. Restricted securities are not "margin stock."

We further note that the PIPEs Interpretation supports the conclusion that registration is not equivalent to a current intent to distribute. If registration did equate with such a distribution intent, then we believe that no PIPE transaction could ever occur because the mere fact of subsequent registration would presumably negate an investor's prior representation of investment intent, which would in turn destroy any private placement exemption. However, the PIPEs Interpretation supports our view that an investor can have a valid investment intent, even if the shares purchased are registered for resale at the time of closing.

In addition, we respectively note that our average daily trading volume over the past three months (determined as of June 9, 2011) was approximately 145,594 shares. If the Investors attempted to liquidate the 37.5 million shares potentially issuable under the Notes as of the closing of the Financing (without regard to the "blocker" provision) through open-market sales at the current average trading volume, it would take them between 1.2 and 4.9 years to do so, depending on how much of the future daily trading volume Investor sales represented (these assumptions reflect a range of 100% to 25%). Looking to the full number of shares being registered on the Registration Statement, it would take the Investors between 8.9 and 35.8 years to fully sell, again assuming sales at the current average daily trading volume and Investor sales accounting for between 100% and 25% of the daily sales. The following table illustrates these hypothetical sales time periods.

	Years Needed to Sell Shares at Assumed Average Daily Trading Volume [1]		
Total Shares Underlying Notes	**100%**	**50%**	**25%**
37,500,000 [2]	1.2	2.4	4.9
271,221,610 [3]	8.9	17.9	35.8

(1) In calculating years needed, we have taken into account no holidays (i.e., every weekday is a trading day). Based on actual trading days, the periods of time would be longer. Percentages in the table (100%, 50% and 25%) reflect an assumption of how much of the future trading volume would come from sales by the Investors. Years needed to sell is based on the current 3-month average daily trading volume as of June 9, 2011, as reported by Yahoo! Finance.

(2) Represents total number of shares underlying the conversion feature of the Notes at the time of issuance, without regard to the blocker provisions.

(3) Represents the total number of shares being registered on the Registration Statement, which is the maximum number of shares that could be issued upon the conversion of the Notes at maturity in May 2021.

We respectfully submit that in considering these time periods, it is not reasonable to believe that the Investors purchased their shares in the Financing for the purpose of making a distribution if it would take them years or even decades to do so. Stated another way, we do not believe it is reasonable to conclude that an investor would purchase such a large block of shares with the intent of effecting a distribution. The thin float in the Common Stock would render any attempt to distribute the shares impractical.

In addition, there is no evidence that a distribution would occur if the Registration Statement is declared effective. Under the Commission's rules, a "distribution" requires special selling efforts. Rule 100(b) of Regulation M defines a "distribution" as

> "an offering of securities, whether or not subject to registration under the Securities Act, that is distinguished from ordinary trading transactions by the magnitude of the offering and the presence of special selling efforts and selling methods." (emphasis added)

Accordingly, the mere size of a potential offering does not make a proposed sale a “distribution.” Special selling efforts and selling methods must be employed before an offering can constitute a distribution. Here there is nothing to suggest that any special selling efforts or selling methods have or would take place if all of the Conversion Shares were registered. Nor are we aware of any facts to suggest that any of the Investors have conducted any road shows or taken any other actions to condition or “prime” the market for the potential resale of their shares. We further note that doing so would violate the representations made by them in the Purchase Agreement.

Investor Relationship to the Issuer

As disclosed in the Registration Statement, the Investors have previously acquired shares of Company Common Stock, with significant ownership positions in the Company’s securities dating back to June 2007 for one Investor and August 2008 for the other Investor. As indicated above, both of the Investors are institutional investors who represented that they were purchasing their securities for investment and not with a view to making an illegal distribution. As the long-term holdings of the Investors demonstrates, both Investors have acted as long-term buy and hold investors and performed significant, fundamental due diligence on the Company prior to making their investment decisions. We respectfully submit that there is no basis for believing that the Investors do not have the intention or ability to hold their shares for an indefinite period.

The Amount of Shares Involved

At the outset, we wish to note that the number of shares being registered is only one factor cited in the Interpretation to be considered by the Staff in applying Rule 415, and that the multi-factorial nature of the analysis has been reiterated on numerous occasions by members of the Office of Chief Counsel.

As we understand the Staff’s concerns relating to Rule 415 in this context, several years ago the Staff became increasingly concerned about public resales of securities purchased in “toxic” transactions. We understand that the Staff believed that public investors could be harmed and did not have an appropriate understanding as to the nature of the investment being made or the negative impact that such transactions could have on the market prices of the issuers involved. In many of these “toxic” transactions, an issuer would commit to issuing shares at a conversion price that floated in accordance with the market prices of the underlying common stock. When the offerings were announced, the stock prices often fell, with the result that the issuer would ultimately issue significant blocks of stock — in many cases well in excess of 100% of the shares previously outstanding. In these toxic situations, existing investors or investors who purchased shares after the announcement of the transaction frequently faced unrelenting downward pressure on the value of their investments. In many of these cases, the shares held by non-participants in these transactions were ultimately rendered worthless.

In order to combat the effects of these toxic transactions, we understand that the Office of Chief Counsel and the senior Staff members of the Division began to look at ways to discourage toxic transactions and to limit the impact of these transactions. One way to do so was to limit the ability of the investors in those transactions to have their shares registered.

The Staff has advised our outside counsel that, in order to monitor these types of transactions, the Staff was asked to compare the number of shares an issuer sought to register with the number of shares outstanding and held by non-affiliates prior to the offering in question. As we understand this mandate, the Staff was instructed to look more closely at any situation where an offering involved more than approximately one-third of the public float. If an issuer sought to register more than one-third of its public float, the Staff was instructed to examine the transaction to see if it implicated Staff concerns that a secondary offering might be a "disguised" primary offering for Rule 415 purposes. According to the Office of Chief Counsel, we understand that this test was intended to be a mere screening tool and was not intended to substitute for a complete analysis of the factors cited in the Interpretation and discussed above and below. As far as we are aware, no rule-based rationale for the one-third threshold has ever been articulated by the Staff. In partial response to concern over the Staff's interpretive position, we understand that the Staff's focus shifted to "Extreme Convertible" transactions to avoid disrupting legitimate PIPE transactions. As described above, we respectfully submit that the terms of the Financing do not implicate any of the concerns leading to the focus on Extreme Convertible situations.

The availability of Rule 415 depends on whether the offering is made by selling stockholders or deemed to be made by or on behalf of the issuer. In order for the Staff to determine that the offering is really being made on behalf of the issuer, the Staff must conclude that the selling stockholders are seeking to effect a distribution of the shares. However, if the Staff's concern is that a distribution is taking place, we submit that the number of shares being registered should be one of the less important factors in the Staff's analysis (i.e., an illegal distribution of shares can take place when the amount of shares involved is less than one-third of the non-affiliate float). In fact, for the reasons noted above relating to the relative illiquidity of the Company's securities, we submit that it would be significantly easier to effect an illegal distribution when the number of shares involved is relatively small in relation to the shares outstanding or the public float. As demonstrated above, when investors buy a large stake of a small public company such as ours, it is virtually impossible for the investors to exit the stock in market transactions. Contrary to the Staff's screening criteria, we submit that the larger the investment, the harder it may be for an investor to effect a distribution, particularly in the case of a small public company with a limited trading market.

We further submit that limiting resale offerings to one-third of the public float seemingly contradicts other interpretative positions of the Staff. For example, Interpretation 612.12 describes a scenario where a holder of 73% of the outstanding stock would be able to effect a valid secondary offering. The interpretation states, in relevant part:

> "A controlling person of an issuer owns a 73% block. That person will sell the block in a registered 'at-the-market' equity offering. Rule 415(a)(4), which places certain limitations on 'at-the-market' equity offerings, applies only to offerings by or on behalf of the registrant. A secondary offering by a control person that is not deemed to be by or on behalf of the registrant is not restricted by Rule 415(a)(4)."

In addition, Interpretation 216.14, regarding the use of Form S-3 to effect a secondary offering, provides:

> "Secondary sales by affiliates may be made under General Instruction I.B.3. to Form S-3 [relating to secondary offerings], even in cases where the affiliate owns more than 50% of the issuer's securities, unless the facts clearly indicate that the affiliate is acting as an underwriter on behalf of the issuer." (emphasis added)

These interpretive positions support our belief that the holder of well in excess of one-third of the public float can effect a valid secondary offering of its shares unless other facts — beyond the mere level of ownership — indicate that the affiliate is acting as a conduit for the issuer.

A singular focus on the number of shares being registered appears reminiscent of the "presumptive underwriter" doctrine, under which the Staff previously took the position that the sale of more than 10% of the outstanding registered stock of an issuer made the investor a "presumptive underwriter" of the offering. We note that the presumptive underwriter doctrine was abandoned by the Staff more than 20 years ago. See American Council of Life Insurance (avail. June 10, 1983). More recent rule making has continued this trend away from this doctrine. See Securities Act Release No. 33-8869 (December 6, 2007) (eliminating the "presumptive underwriter" provisions of Rule 145(c) and (d) in most cases). Accordingly, we do not believe that there is any basis to apply the doctrine here.

However, even if the number of shares registered is the sole focus of the inquiry, we do not believe that the Financing should raise significant concerns about a "disguised" primary offering based on the number of shares the Company seeks to register. We note that the number of shares that we are registering represents the shares that would potentially be issuable at the end of the 10-year term of the Notes; at present, a significantly smaller number of shares (37.5 million) is presently issuable (assuming that the "blocker" was not in place).

Based on the foregoing facts, we believe that the Company should be entitled to register all of the shares it is seeking to cover in the Registration Statement.

Whether the Sellers are in the Business of Underwriting Securities

None of the Investors are in the business of underwriting securities. As described above, the Investors are private investment funds that buy and sell portfolio securities for their own accounts. All of the Investors represented at the time of purchase that they were buying for their own accounts, for investment, and not with an intention to distribute in violation of the Act. There is no allegation that those representations and warranties are untrue and no factual basis for any such allegation.

Whether Under All the Circumstances it Appears that the Seller is Acting as a Conduit for the Issuer

As the facts and analysis provided above demonstrate, the Investors are not engaging in a distribution and are not acting as conduits for the Company. The Investors made fundamental decisions to invest in the Company, have held their securities for a period of time that exceeds the periods sanctioned in the Staff's PIPEs Interpretation, have represented their investment intent and disclaimed any intent to illegally distribute their shares and really have no alternative but to hold their shares for a period of years, given the limited trading volume in the Company's securities. We believe that the number of shares covered by the Registration Statement that are potentially presently issuable (i.e., not at the end of the 10-year term of the Notes) is reasonable in relation to other transactions that have been reviewed and approved by the Staff. Additionally, we note that none of the Investors are in the business of underwriting securities. In these circumstances we believe that the offering the Company seeks to register is a valid secondary offering and may proceed consistent with Rule 415.

The Investors Are Not Underwriters

Section 2(11) of the Act defines an "underwriter" to include

> "any person who has purchased from an issuer with a view to, or offers or sells for an issuer in connection with, the distribution of any security, or participates or has a direct or indirect participation in any such undertaking, or participates in or has a participation in the direct or indirect underwriting of any such undertaking…."

It is axiomatic that a "distribution" of securities on behalf of an issuer must be taking place before a person can be an underwriter. As demonstrated above, the Financing is properly characterized as a valid secondary offering and not as an offering "by or on behalf of the registrant." Further, as also demonstrated above, no "distribution" of securities is occurring or can reasonably be alleged to be contemplated. Because there is no distribution of securities on behalf of an issuer, there is no underwriting and none of the Investors should be characterized as an "underwriter" within the meaning of the Act. To the extent that the Staff views the amount of Common Stock beneficially owned by the Investors as evidence that they are acting as "underwriters," we respectfully submit that such a view appears to be based solely on the presumptive underwriter doctrine, which we understand has been out of favor for more than 20 years and seemingly is at odds with other Staff interpretations, such as Interpretations 612.02 and 216.14 described above.

Conclusion

For all of the foregoing reasons, we believe that the Company should be permitted to proceed with the registration of the shares issuable in the Financing. We respectfully submit that no potential violation of Rule 415 exists and, in these circumstances, there is no risk to the investing public if the Registration Statement is declared effective. Furthermore, we believe that the Investors are not "underwriters" under the Act with respect to the offering contemplated by the Registration Statement.

2. Please provide us, with a view toward disclosure in the prospectus, with the total dollar value of the securities underlying the convertible notes that you have registered for resale (using the number of underlying securities that you have registered for resale and the market price per share for those securities on the date of the sale of the convertible notes).

RESPONSE TO COMMENT 2

In response to the Staff's comment, the Company has provided the requested disclosure in Amendment No. 1. The additional disclosure is set forth on page 3 in Amendment No. 1.

3. **Please provide us, with a view toward disclosure in the prospectus, with tabular disclosure of the dollar amount of each payment (including the value of any payments to be made in common stock) in connection with the transaction that you have made or may be required to make to any selling stockholder, any affiliate of a selling stockholder, or any person with whom any selling stockholder has a contractual relationship regarding the transaction (including any interest payments, liquidated damages, payments made to "finders" or "placement agents," and any other payments or potential payments). Please provide footnote disclosure of the terms of each such payment. Please do not include any repayment of principal on the convertible notes in this disclosure.**

   Further, please provide us, with a view toward disclosure in the prospectus, with disclosure of the net proceeds to the issuer from the sale of the convertible notes and the total possible payments to all selling stockholders and any of their affiliates in the first year following the sale of convertible notes.

RESPONSE TO COMMENT 3

In response to the Staff's comment, the Company has provided the requested disclosure in Amendment No. 1. The additional disclosure is set forth on page 5 in Amendment No. 1, although it has been provided in narrative, rather than tabular format, due to the fact that certain of the potential payments cannot be estimated.

4. **Please provide us, with a view toward disclosure in the prospectus, with tabular disclosure of:**
   - **the total possible profit the selling stockholders could realize as a result of the conversion discount for the securities underlying the convertible notes, presented in a table with the following information disclosed separately:**
     - **the market price per share of the securities underlying the convertible notes on the date of the sale of the convertible notes;**
     - **the conversion price per share of the underlying securities on the date of the sale of the convertible notes;**
     - **the total possible shares underlying the convertible notes (assuming no interest payments and complete conversion throughout the term of the note);**
     - **the combined market price of the total number of shares underlying the convertible notes, calculated by using the market price per share on the date of the sale of the convertible notes and the total possible shares underlying the convertible notes;**

- **the total possible shares the selling stockholders may receive and the combined conversion price of the total number of shares underlying the convertible notes calculated by using the conversion price on the date of the sale of the convertible notes and the total possible number of shares the selling stockholders may receive; and**
- **the total possible discount to the market price as of the date of the sale of the convertible notes, calculated by subtracting the total conversion price on the date of the sale of the convertible notes from the combined market price of the total number of shares underlying the convertible notes on that date.**

If there are provisions in the convertible notes that could result in a change in the price per share upon the occurrence of certain events, please provide additional tabular disclosure as appropriate. For example, if the conversion price per share is fixed unless and until the market price falls below a stated price, at which point the conversion price per share drops to a lower price, please provide additional disclosure.

RESPONSE TO COMMENT 4

In response to the Staff's comment, the Company has provided the requested disclosure in Amendment No. 1. The additional disclosure is set forth on page 5 in Amendment No. 1.

5. Please provide us, with a view toward disclosure in the prospectus, with tabular disclosure of:

- **the total possible profit to be realized as a result of any conversion discounts for securities underlying any other warrants, options, notes, or other securities of the issuer that are held by the selling stockholders or any affiliates of the selling stockholders, presented in a table with the following information disclosed separately:**
- **market price per share of the underlying securities on the date of the sale of that other security;**
- **the conversion/exercise price per share as of the date of the sale of that other security, calculated as follows:**
  - **if the conversion/exercise price per share is set at a fixed price, use the price per share on the date of the sale of that other security; and**
  - **if the conversion/exercise price per share is not set at a fixed price and, instead, is set at a floating rate in relationship to the market price of the underlying security, use the conversion/exercise discount rate and the market rate per share on the date of the sale of that other security and determine the conversion price per share as of that date;**

- **the total possible shares to be received under the particular securities (assuming complete conversion/exercise);**
- **the combined market price of the total number of underlying shares, calculated by using the market price per share on the date of the sale of that other security and the total possible shares to be received;**
- **the total possible shares to be received and the combined conversion price of the total number of shares underlying that other security calculated by using the conversion price on the date of the sale of that other security and the total possible number of underlying shares; and**
- **the total possible discount to the market price as of the date of the sale of that other security, calculated by subtracting the total conversion/exercise price on the date of the sale of that other security from the combined market price of the total number of underlying shares on that date.**

RESPONSE TO COMMENT 5

The selling stockholders hold no convertible securities that have conversion discounts for the underlying securities other than the notes.

6. Please provide us, with a view toward disclosure in the prospectus, with tabular disclosure of:

- **the gross proceeds paid or payable to the issuer in the convertible notes transaction;**
- **all payments that have been made or that may be required to be made by the issuer that are disclosed in response to comment 3;**
- **the resulting net proceeds to the issuer; and**
- **the combined total possible profit to be realized as a result of any conversion discounts regarding the securities underlying the convertible notes and any other warrants, options, notes, or other securities of the issuer that are held by the selling stockholders or any affiliates of the selling stockholders that is disclosed in response to comments 4 and 5.**

Further, please provide us, with a view toward disclosure in the prospectus, with disclosure — as a percentage — of the total amount of all possible payments as disclosed in response to comment 3 and the total possible discount to the market price of the shares underlying the convertible notes as disclosed in response to comment 4 divided by the net proceeds to the issuer from the sale of the convertible notes, as well as the amount of that resulting percentage averaged over the term of the convertible notes.

RESPONSE TO COMMENT 6

In response to the Staff's comment, the Company has provided the requested disclosure in Amendment No. 1. The additional disclosure is set forth on page 5 in Amendment No. 1.

7. Please provide us, with a view toward disclosure in the prospectus, with tabular disclosure of all prior securities transactions between the issuer (or any of its predecessors) and the selling stockholders, any affiliates of the selling stockholders, or any person with whom any selling stockholder has a contractual relationship regarding the transaction (or any predecessors of those persons), with the table including the following information disclosed separately for each transaction:

- **the date of the transaction;**
- **the number of shares of the class of securities subject to the transaction that were outstanding prior to the transaction;**
- **the number of shares of the class of securities subject to the transaction that were outstanding prior to the transaction and held by persons other than the selling stockholders, affiliates of the company, or affiliates of the selling stockholders;**
- **the number of shares of the class of securities subject to the transaction that were issued or issuable in connection with the transaction;**
- **the percentage of total issued and outstanding securities that were issued or issuable in the transaction (assuming full issuance), with the percentage calculated by taking the number of shares issued and outstanding prior to the applicable transaction and held by persons other than the selling stockholders, affiliates of the company, or affiliates of the selling stockholders, and dividing that number by the number of shares issued or issuable in connection with the applicable transaction;**
- **the market price per share of the class of securities subject to the transaction immediately prior to the transaction (reverse split adjusted, if necessary); and**
- **the current market price per share of the class of securities subject to the transaction (reverse split adjusted, if necessary).**

RESPONSE TO COMMENT 7

In response to the Staff's comment, the Company has provided the requested disclosure in Amendment No. 1. The additional disclosure is set forth on page 6 in Amendment No. 1.

8. Please provide us, with a view toward disclosure in the prospectus, with tabular disclosure comparing:

- **the number of shares outstanding prior to the convertible notes transaction that are held by persons other than the selling stockholders, affiliates of the company, and affiliates of the selling stockholders;**
- **the number of shares registered for resale by the selling stockholders or affiliates of the selling stockholders in prior registration statements;**
- **the number of shares registered for resale in those prior registration statements by the selling stockholders or affiliates of the selling stockholders that continue to be held by the selling stockholders or affiliates of the selling stockholders;**
- **the number of shares that have been sold in prior registered resale transactions by the selling stockholders or affiliates of the selling stockholders; and**
- **the number of shares registered for resale on behalf of the selling stockholders or affiliates of the selling stockholders in the current transaction.**

In this analysis, the calculation of the number of outstanding shares should not include any securities underlying any outstanding convertible securities, options, or warrants.

RESPONSE TO COMMENT 8

In response to the Staff's comment, the Company has provided the requested disclosure in Amendment No. 1. The additional disclosure is set forth on page 6 in Amendment No. 1.

9. Please provide us, with a view toward disclosure in the prospectus, with the following information:

- **whether the issuer has the intention, and a reasonable basis to believe that it will have the financial ability, to make all payments on the overlying securities; and**
- **whether — based on information obtained from the selling stockholders — any of the selling stockholders have an existing short position in the company's common stock and, if any of the selling stockholders have an existing short position in the company's stock, the following additional information:**
  - **the date on which each such selling stockholder entered into that short position; and**

- **the relationship of the date on which each such selling stockholder entered into that short position to the date of the announcement of the convertible notes transaction and the filing of the registration statement (*e.g.*, before or after the announcement of the convertible notes transaction, before the filing or after the filing of the registration statement, etc.).**

RESPONSE TO COMMENT 9

The Company intends to comply with the payment requirements on the overlying notes, but does not presently have the financial ability to make all payments. The Company expects to raise additional capital to allow it to have the financial means to pay off the notes. However, the Company is prohibited from prepaying the notes, so the timing of any potential repayment is out of the Company's control.

In response to inquiries made with the selling stockholders, we understand that one of the selling stockholders has an open short position in the Company's common stock, which was established in 2007. The short position is valued at approximately $12,000, based on the current market price of the Company's common stock (i.e., the value of the securities needed to cover). We respectfully submit that disclosure of this short position is not material and is unrelated to the offering of the Notes and the sale of the shares under the prospectus. Accordingly, we believe that this position need not be disclosed in the prospectus. Additionally, we note that the selling stockholders did provide representations in the Purchase Agreement that no short positions were established within 30 days prior to entering into the agreement and no such positions will be established prior to the date of effectiveness of the Registration Statement.

10. Please provide us, with a view toward disclosure in the prospectus, with:

- **a materially complete description of the relationships and arrangements that have existed in the past three years or are to be performed in the future between the issuer (or any of its predecessors) and the selling stockholders, any affiliates of the selling stockholders, or any person with whom any selling stockholder has a contractual relationship regarding the transaction (or any predecessors of those persons) — the information provided should include, in reasonable detail, a complete description of the rights and obligations of the parties in connection with the sale of the convertible notes; and**
- **copies of all agreements between the issuer (or any of its predecessors) and the selling stockholders, any affiliates of the selling stockholders, or any person with whom any selling stockholder has a contractual relationship regarding the transaction (or any predecessors of those persons) in connection with the sale of the convertible notes.**

If it is your view that such a description of the relationships and arrangements between and among those parties already is presented in the prospectus and that all agreements between and/or among those parties are included as exhibits to the registration statement, please provide us with confirmation of your view in this regard.

RESPONSE TO COMMENT 10

It is the Company's view that a materially complete description of the relationships and arrangements between the Company and the selling stockholders is included in the prospectus and the documents incorporated by reference therein, and that all agreements between and/or among those parties are included as exhibits to the registration statement.

11. Please provide us, with a view toward disclosure in the prospectus, with a description of the method by which the company determined the number of shares it seeks to register in connection with this registration statement. In this regard, please ensure that the number of shares registered in the fee table is consistent with the shares listed in the "Selling Stockholders" section of the prospectus.

RESPONSE TO COMMENT 11

As described above in the response to Comment No. 1, the number of shares registered in the registration statement is equal to the total amount of principal and accrued interest that will potentially be due under the Notes at maturity in May 2021 (based on the current outstanding principal balance of $1,500,000), assuming that all interest payments over the 10-year term are made in-kind. We note that the actual number of shares that may be issued under the Notes may be significantly less, if the Notes are converted prior to maturity or if interest payments are made in cash. The Company has provided this additional disclosure on the cover page and page 3 in Amendment No. 1.

12. With respect to the shares to be offered for resale by each selling stockholder that is a legal entity, please disclose the natural person or persons who exercise the sole or shared voting and/or dispositive powers with respect to the shares to be offered by that stockholder.

RESPONSE TO COMMENT 12

With respect to Baker Bros. Investments II, L.P., Baker Brothers Life Sciences, L.P. and 14159, L.P. Mr. Julian Baker and Mr. Felix Baker share voting and dispositive power. In response to the Staff's comment, the Company has revised the disclosure in footnote (4) to the selling stockholder table on page 4 of Amendment No. 1.

With respect to Tang Capital Partners, Mr. Kevin C. Tang has sole voting and dispositive power. In response to the Staff's comment, the Company has revised the disclosure in footnote (3) to the selling stockholder table on page 4 of Amendment No. 1.

13. We note that the legal opinion filed with this registration statement states that counsel:

> **has assumed that after the issuance of the shares upon conversion of the notes, the total number of issued and outstanding shares of the company's common stock… will not exceed the total number of authorized shares of common stock under the company's certificate of incorporation, as amended and then in effect.**

It is not appropriate to include a legal opinion which assumes that stockholders will authorize an increase in the number of authorized shares of common stock. Please revise your legal opinion to remove this assumption.

RESPONSE TO COMMENT 13

The Company will file an unqualified legal opinion with a subsequent pre-effective amendment following receipt of stockholder approval of an increase in the authorized number of shares, which is expected to be obtained at the Company's 2011 Annual Meeting of Stockholders to be held on June 29, 2011.

The Company hereby acknowledges that (i) the Company is responsible for the adequacy and accuracy of the disclosure in its filing, (ii) Staff comments or changes to disclosure based on Staff comments does not foreclose the Commission from taking any actions with respect to the Company's filing, and (iii) it is the Staff's position that the Company may not assert Staff comments as defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

If you should have any questions about this letter or require any further information, please call the undersigned at (650) 366-2626 or Ryan Murr at (415) 315-6300.

Sincerely,

/s/ John B. Whelan
John B. Whelan
Chief Executive Officer

cc: Ryan Murr, Esq. (Ropes & Gray LLP)