

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION**  
Washington, D.C. 20549  
**FORM S-1**  
**REGISTRATION STATEMENT**  
*UNDER*  
**THE SECURITIES ACT OF 1933**

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

Delaware  
(State of incorporation)

94-2875566  
(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

**CALCULATION OF REGISTRATION FEE**

Title of each class of securities to be registered	Amount to be registered(1)	Proposed maximum offering price per share(2)	Proposed maximum aggregate offering price(2)	Amount of registration fee(2)
Common Stock, par value \$0.01 per share	240,000,011 shares	\$0.3094	\$74,256,003.40	\$8,621.12

- (1) Represents shares of Common Stock, par value \$0.01 per share, that may be sold by the selling stockholders named in this registration statement, which shares consist of (i) 160,000,006 shares of Common Stock which were issued pursuant to a Securities Purchase Agreement we entered into on June 29, 2011 with selected accredited investors (the "Securities Purchase Agreement") and (ii) 80,000,005 shares of Common Stock issuable upon exercise of warrants issued pursuant to the Securities Purchase Agreement (the "Warrants"). Pursuant to Rule 416 of the Securities Act of 1933, as amended, this registration statement also covers such an indeterminate amount of shares of Common Stock as may become issuable to prevent dilution resulting from stock splits, stock dividends and similar events.
- (2) Pursuant to Rule 457(c), calculated on the basis of the average of the high and low prices of the registrant's Common Stock quoted on the OTCQB on July 28, 2011.

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 July 29, 2011**

**A.P. PHARMA, INC.  
240,000,011 shares of Common Stock**

This prospectus covers the sale of an aggregate of up to 240,000,011 shares of our common stock, \$0.01 par value per share (the “Common Stock”), 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 (i) 160,000,006 shares of Common Stock which were issued pursuant to a Securities Purchase Agreement we entered into on June 29, 2011 with selected accredited investors (the “Securities Purchase Agreement”) and (ii) 80,000,005 shares of Common Stock issuable upon exercise of warrants issued pursuant to the Securities Purchase Agreement (the “Warrants”).

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 July 28, 2011, the last reported sale price per share of our Common Stock on the OTCQB was \$0.31. 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 2 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” on page 10 for more information. 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<sup>(TM)</sup> polymer-based drug delivery technology. Our primary focus is on our lead product candidate, APF530, for the prevention of chemotherapy-induced nausea and vomiting, or CINV. 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 new drug application, or 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 APF530 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" beginning on page 10.

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 240,000,011 shares of Common Stock, which consists of 160,000,006 shares of Common Stock and 80,000,005 shares of Common Stock issuable upon exercise of the Warrants (such shares collectively 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 total value of the 240,000,011 shares of Common Stock being registered hereunder is approximately \$74,400,003.41, based on the last quoted sale price for our Common Stock of \$0.31 on July 28, 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 10 and "Information Incorporated by Reference" beginning on page 10.

### 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 240,000,011 Shares, which consists of (i) 160,000,006 shares of Common Stock and (ii) 80,000,005 shares of Common Stock issuable upon exercise of the Warrants, each of (i) and (ii) as issued pursuant to the Securities Purchase Agreement. See “Description of Securities to be Registered” beginning on page 7. We raised gross proceeds of \$24.0 million from this private placement.

Each investor in the private placement represented to us that it was an accredited investor and that it was acquiring the Shares and the Warrants for investment only and not with a view towards, or for resale in connection with, the public sale or distribution thereof in a manner that would violate the Securities Act or any applicable state securities laws.

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 6. Unless otherwise disclosed in the footnotes to the table below, except for the ownership of the Common Stock and Warrants, the Selling Stockholders have not had any material relationship with us within the past three years.

Under the terms of the Warrants, Selling Stockholders have no right to exercise the Warrants to the extent that after giving effect to such exercise the Selling Stockholder would beneficially own in excess of 9.99% of the outstanding shares of Common Stock following such exercise (or such lower limit as may be designated by any particular Selling Stockholder). Each Selling Stockholder can amend or waive the foregoing limitation by written notice to the Company, with such waiver taking effect only upon the expiration of a 61-day notice period. The number of shares in the second column below does not reflect this limitation.

<u>Selling Stockholder (1)</u>	<u>Number of Shares Beneficially Owned before Offering</u>	<u>Number of Shares Covered by This Prospectus</u>	<u>Number of Shares Beneficially Owned after Offering(2)</u>	<u>Percentage of Shares Beneficially Owned after Offering(3)</u>
Tang Capital Partners, LP(4)	60,436,506	75,000,000	23,815,877	9.99%
Baker Brothers Life Sciences, L.P.(5)	20,526,568	14,730,000	22,159,934	9.99%
14159, L.P.(5)	20,526,568	270,000	22,159,934	9.99%
Biotechnology Value Fund, LP (6)	4,384,551	4,384,551	—	—
Biotechnology Value Fund II, LP (6)	2,953,500	2,953,500	—	—
Investment 10, LLC (6)	1,304,400	1,304,400	—	—
BVF Investments, LLC (6)	11,357,550	11,357,550	—	—
2400 Franklin Templeton Funds - Franklin Biotechnology Fund (7)	360,849	360,849	—	—
4402 - Franklin Strategic Series - Franklin Biotechnology Discovery Fund (7)	16,354,805	16,354,805	—	—
4912 FTIF - Franklin Biotechnology Discovery Fund (7)	5,284,347	5,284,347	—	—
Hutchin Hill Capital LS5, Ltd. (8)	10,000,001	10,000,001	—	—
H&Q Healthcare Investors (9)	13,800,000	13,800,000	—	—
H&Q Life Science Investors (9)	6,200,001	6,200,001	—	—
IsZo Capital LP (10)	18,500,001	18,500,001	—	—
Mark Pearson (11)	5,000,001	4,000,001	1,000,000	*
The Wygod Family Revocable Living Trust u/a/d 12-15-08 (12)	4,500,000	4,500,000	—	—
Kevin M. Cameron (12)	250,001	250,001	—	—
Charles A. Mele (12)	250,000	250,000	—	—
Obsidian Management LLC (13)	5,000,001	5,000,001	—	—
Perceptive Life Sciences Master Fund, Ltd. (14)	26,666,667	40,000,001	—	—
RTW Master Fund, Ltd. (15)	5,000,001	5,000,001	—	—
Srinivas Akkaraju (16)	500,001	500,001	—	—

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\*Represents less than 1.0%.

- (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) This percentage is based upon 200,017,796 shares of Common Stock outstanding, plus the number of shares of Common Stock issuable to such Selling Stockholder upon the exercise of the Warrants issued pursuant to the Securities Purchase Agreement.
- (4) 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, LP is 4401 Eastgate Mall, San Diego, CA 92121. Mr. Tang shares voting and dispositive power over these shares with Tang Capital Management, LLC and Tang Capital Partners, LP. Mr. Tang disclaims beneficial ownership of all shares beneficially owned, except to the extent of his pecuniary interests therein.
- (5) The number of shares beneficially owned before the offering includes 20,526,568 shares beneficially owned by Baker Brothers Life Sciences, L.P., 1,796,644 shares beneficially owned by 667, L.P., 876,209 shares beneficially owned by 14159, L.P. and 5,967 shares beneficially owned by Baker/Tisch Investments, 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. Information relating to the number of shares held is based on that certain Statement of Beneficial Ownership on Schedule 13D, as amended on July 7, 2011, filed by Julian C. Baker and Felix J. Baker.
- (6) Biotechnology Value Fund, L.P. ("BVF") beneficially owns 4,384,551 shares of Common Stock, including 1,461,517 shares of Common Stock issuable upon the exercise of Warrants. Biotechnology Value Fund II, L.P. ("BVF2") beneficially owns 2,953,500 shares of Common Stock, including 984,500 shares of Common Stock issuable upon the exercise of Warrants. Investment 10, LLC ("ILL10") beneficially owns 1,304,400 shares of Common Stock, including 434,800 shares of Common Stock issuable upon the exercise of Warrants. BVF Investments, LLC ("BVLLC" and together with BVF, BVF2 and ILL10, the "BV Funds") beneficially holds 11,357,550 shares of Common Stock, including 3,785,850 shares of Common Stock issuable upon the exercise of Warrants. BVF Partners L.P. ("Partners") as the general partner of BVF and BVF2, the manager of BVLLC and the investment adviser of ILL10, may be deemed to beneficially own the 20,000,001 shares of

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Common Stock, including 6,666,667 shares of Common Stock issuable upon the exercise of the Warrants, beneficially owned in the aggregate by BVF, BVF2, BVLLC and ILL10. BVF Inc., as the general partner of Partners, may be deemed to beneficially own the 20,000,001 shares of Common Stock, including 6,666,667 shares of Common Stock issuable upon the exercise of the Warrants, beneficially owned by Partners. Mr. Mark N. Lampert, as a director and officer of BVF Inc., may be deemed to beneficially own the 20,000,001 shares of Common Stock, including 6,666,667 shares of Common Stock issuable upon the exercise of Warrants, beneficially owned by BVF Inc. The foregoing should not be construed in and of itself as an admission by any of the foregoing persons as to beneficial ownership of any shares of Common Stock owned by another foregoing person. Each of Partners, BVF Inc. and Mr. Mark N. Lampert disclaims beneficial ownership of the shares of Common Stock beneficially owned by BVF, BVF2, BVLLC and ILL10 and the filing of this prospectus shall not be construed as an admission that any such person or entity is the beneficial owner of any such securities. Pursuant to the Securities Purchase Agreement, the BV Funds acquired Warrants exercisable for an aggregate of 6,666,667 shares of Common Stock. Information relating to the number of shares held is based on that certain Statement of Beneficial Ownership on Schedule 13G, filed on July 8, 2011 the BV Funds, Partners, BVF Inc. and Mr. Mark N. Lampert.

- (7) 2400 Franklin Templeton Funds - Franklin Biotechnology Fund beneficially owns 240,566 shares of Common Stock and Warrants to purchase 120,283 shares of Common Stock. 4402 - Franklin Strategic Series - Franklin Biotechnology Discovery Fund beneficially owns 10,903,203 shares of Common Stock and Warrants to purchase 5,451,602 shares of Common Stock. 4912 FTIF - Franklin Biotechnology Discovery Fund beneficially owns 3,522,898 shares of Common Stock and Warrants to purchase 1,761,449 shares of Common Stock. Evan McCulloch is a natural person who makes voting and investment decisions with respect to the shares beneficially owned by 2400 Franklin Templeton Funds - Franklin Biotechnology Fund and 4912 FTIF - Franklin Biotechnology Discovery Fund. David Goss is a natural person who makes voting and investment decisions with respect to the shares beneficially owned by 4402 - Franklin Strategic Series - Franklin Biotechnology Discovery Fund.
- (8) Includes 6,666,667 shares of Common Stock and Warrants to purchase 3,333,334 shares of Common Stock beneficially owned by Hutchin Hill Capital LS5, Ltd. Hutchin Hill Capital, LP, the investment manager of Hutchin Hill Capital LS5, Ltd., has voting and investment power over these securities. Neil Chriss is the managing member of Hutchin Hill Capital GP, LLC, which is the general partner of Hutchin Hill Capital, LP. Neil Chriss disclaims beneficial ownership over these securities.
- (9) H&Q Healthcare Investors beneficially owns 9,200,000 shares of Common Stock and Warrants to purchase 4,600,000 shares of Common Stock. H&Q Life Science Investors beneficially owns 4,133,334 shares of Common Stock and Warrants to purchase 2,066,667 shares of Common Stock. Daniel R. Omstead, president of H&Q Healthcare Investors and H&Q Life Science Investors (collectively, the "H&Q Funds"), is a natural person who makes voting and investment decisions with respect to the shares beneficially owned by each of the H&Q Funds.
- (10) Includes 12,333,334 shares of Common Stock and Warrants to purchase 6,166,667 shares of Common Stock beneficially owned by IsZo Capital LP. Brian Sheehy is a natural person who makes voting and investment decisions with respect to these shares on behalf of IsZo Capital LP's investment manager.
- (11) Includes 3,666,667 shares of Common Stock and Warrants to purchase 1,333,334 shares of Common Stock beneficially owned by Mark Pearson. Mark Pearson is a natural person who makes investment and voting decisions with respect to these shares.
- (12) The Wygod Family Revocable Living Trust u/a/d 12-15-08 beneficially owns 3,000,000 shares of Common Stock and Warrants to purchase 1,500,000 shares of Common Stock. Martin J. Wygod is a natural person who makes investment and voting decisions with respect to such shares.  
Kevin M. Cameron beneficially owns 166,667 shares of Common Stock and Warrants to purchase 83,334 shares of Common Stock. Kevin M. Cameron is a natural person who makes investment and voting decisions with respect to these shares.  
Charles A. Mele beneficially owns 166,667 shares of Common Stock and Warrants to purchase 83,333 shares of Common Stock. Charles A. Mele is a natural person who makes investment and voting decisions with respect to these shares.
- (13) Includes 3,333,334 shares of Common Stock and Warrants to purchase 1,666,667 shares of Common Stock beneficially owned by Obsidian Management LLC. Carl Berg and Rachel Berg, members of Obsidian Management LLC, are natural persons who make investment and voting decisions with respect to these shares.



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- (14) Perceptive Life Sciences Master Fund, Ltd. beneficially owns 26,666,667 shares of Common Stock. This number excludes Warrants to purchase 13,333,334 shares of Common Stock held by Perceptive Life Sciences Master Fund, Ltd. because such Warrants are not presently exercisable to the extent that after giving effect to such exercise the holder would beneficially own in excess of 9.99% of the outstanding shares of Common Stock following such exercise and such limitation cannot be amended or waived prior to the expiration of a 61-day notice period. Joseph Edelman is the managing member of Perceptive Advisors LLC, the investment manager for Perceptive Life Sciences Master Fund, Ltd. Information relating to the number of shares held is based on that certain Statement of Beneficial Ownership on Schedule 13G, filed on July 7, 2011 by Perceptive Advisors LLC and Joseph Edelman.
- (15) Includes 3,333,334 shares of Common Stock and Warrants to purchase 1,666,667 shares of Common Stock beneficially owned by RTW Master Fund, Ltd. Roderick Wong is a natural person who makes investment and voting decisions with respect to these shares.
- (16) Includes 333,334 shares of Common Stock and Warrants to purchase 166,667 shares of Common Stock beneficially owned by Srinivas Akkaraju. Srinivas Akkaraju is a natural person who makes investment and voting decisions with respect to these shares.

### **PLAN OF DISTRIBUTION**

The Shares offered by this prospectus may be sold by the Selling Stockholders. Such sales may be made in one or more transactions 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 the Shares 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.

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The Selling Stockholder(s) will be subject to the prospectus delivery requirements of the Securities Act, unless exempted therefrom.

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

- transfer their Shares 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 Shares 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 the Shares 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.

Once sold under the registration statement of which this prospectus is a part, the Shares will be freely tradable in the hands of persons other than our affiliates.

### **DESCRIPTION OF SECURITIES TO BE REGISTERED**

As of the date of this prospectus, our authorized capital stock consists of 1,500,000,000 shares of Common Stock, \$0.01 par value per share, and 2,500,000 shares of preferred stock, \$0.01 par value per share.

#### **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

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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.

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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, an 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" beginning on page 10, "Prospectus Summary" on page 2 and "Risk Factors" on page 2.

## MATERIAL 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 Financial Industry Regulatory Authority, 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;

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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, June 2, 2011 and June 30, 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](http://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.

	<u>Amount to be paid</u>
SEC registration fee	\$8,621.12
Printing expense	5,000
Legal fees and expenses	5,000
Accounting fees and expenses	5,000
Transfer Agent fees	2,500
Miscellaneous fees	5,000
Total	<u>\$31,121.12</u>

**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.

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(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, the Company entered into a Securities Purchase Agreement (the “April Purchase Agreement”) with the purchasers named therein (the “Purchasers”). Pursuant to the April 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, 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.

On June 29, 2011, the Company entered into the Securities Purchase Agreement with the purchasers set forth on Schedule I thereto, pursuant to which the Company agreed to sell for an aggregate price of \$24.0 million a total of 160,000,006 shares of its Common Stock (the “PIPE Shares”) and Warrants to purchase up to an additional 80,000,005 shares of its Common Stock with an exercise price of \$0.18 per share (the “PIPE Offering”). The PIPE Offering, which closed on July 1, 2011, was exempt from registration pursuant to the exemption for transactions by an issuer not involving any public offering under Section 4(2) of the Securities Act and Rule 506 of Regulation D under the Securities Act. Each of the purchasers represented that it was an accredited investor and that it was acquiring the PIPE Shares and the Warrants for investment only and not with a view towards, or for resale in connection with, the public sale or distribution thereof.

### **Item 16. Exhibits.**

See Exhibit Index set forth on page 16 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



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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 July 29, 2011.

A.P. Pharma, Inc.

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

**POWER OF ATTORNEY**

KNOW ALL PERSONS BY THESE PRESENTS that each individual whose signature appears below constitutes and appoints John B. Whelan as his true and lawful attorney-in-fact and agent, with full power of substitution, for him and in his name, place and stead, in any and all capacities, to sign this registration statement and any and all amendments thereto, including post-effective amendments, and to file the same, with all exhibits thereto, any related registration filed pursuant to Rule 462(b) under the Securities Act of 1933, as amended, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all the said attorney-in-fact and agent or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

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.

<u>Signature</u>	<u>Office(s)</u>	<u>Date</u>
<u>/s/ John B. Whelan</u> <b>John B. Whelan</b>	President, Chief Executive Officer and Chief Financial Officer, Director (Principal Executive Officer and Principal Financial and Accounting Officer)	July 29, 2011
<u>/s/ Paul Goddard</u> <b>Paul Goddard</b>	Chairman of the Board of Directors	July 29, 2011
<u>/s/ Kevin C. Tang</u> <b>Kevin C. Tang</b>	Director	July 29, 2011
<u>/s/ Gregory Turnbull</u> <b>Gregory Turnbull</b>	Director	July 29, 2011

EXHIBIT INDEX

<b>Exhibit Number</b>	<b>Document Description</b>
2.1	– Copy of Asset Purchase Agreement between Registrant and RP Scherer South, Inc. dated June 21, 2000. <sup>(1)</sup>
3-A	– Copy of Registrant’s Certificate of Amendment of Certificate of Incorporation. <sup>(2)</sup>
3-B	– Copy of Registrant’s Bylaws. <sup>(3)</sup>
3-C	– Copy of Registrant’s Certificate of Designation. <sup>(4)</sup>
4-A	– Copy of Registrant’s Preferred Shares Rights Agreement. <sup>(5)</sup>
4-B	– Copy of Registrant’s Form of Rights Certificate. <sup>(6)</sup>
4-C	– First Amendment to Registrant’s Preferred Shares Rights Agreement. <sup>(7)</sup>
4-D	– Copy of Specimen Common Stock Certificate. <sup>(8)</sup>
4-F	– Form of Senior Secured Convertible Note Due 2021. <sup>(31)</sup>
5.1	– Opinion of Ropes & Gray LLP
10-C	– Registrant’s 1992 Stock Plan dated August 11, 1992. <sup>(9)*</sup>
10-D	– Registrant’s 1997 Employee Stock Purchase Plan, as amended to date. <sup>(10)*</sup>
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. <sup>(11)</sup>
10-F	– Registrant’s 2002 Equity Incentive Plan dated June 13, 2002. <sup>(12)*</sup>
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. <sup>(13)</sup>
10-H	– Royalty Interest Agreement between Registrant and Paul Royalty Fund dated January 18, 2006. <sup>(14)</sup>
10-I	– Amended and Restated Retention and Non-Competition Agreement between the Registrant and Michael O’Connell effective August 23, 2007. <sup>(15)*</sup>
10-J	– Management Retention Agreement between the Registrant and Dr. John Barr dated as of November 8, 2007. <sup>(16)*</sup>
10-K	– Registrant’s 2007 Equity Incentive Plan. <sup>(17)*</sup>
10-L	– Form of 2007 Equity Incentive Plan Stock Option Agreement. <sup>(18)*</sup>
10-M	– Form of 2007 Equity Incentive Plan Restricted Stock Unit Agreement. <sup>(19)*</sup>
10-N	– Agreement with Johnson & Johnson dated April 14, 1992. <sup>(20)</sup>
10-O	– Form of 2007 Equity Incentive Plan Restricted Stock Award Agreement. <sup>(10)*</sup>
10-P	– Form of 2002 Equity Incentive Plan Stock Option Agreement. <sup>(10)*</sup>
10-Q	– Form of 2002 Equity Incentive Plan Restricted Stock Agreement. <sup>(10)*</sup>
10-R	– Amendment to the Registrant’s Non-Qualified Plan. <sup>(21)*</sup>
10-S	– Form of Indemnification Agreement. <sup>(10)*</sup>
10-T	– Registrant’s Non-Qualified Plan dated June 13, 2002. <sup>(22)*</sup>
10-U	– Employment Letter Agreement with Ronald Prentki, President and Chief Executive Officer dated July 3, 2008. <sup>(23)*</sup>
10-V	– Amendment to Employment Letter Agreement with Ronald Prentki, President and Chief Executive Officer dated December 30, 2008. <sup>(24)*</sup>
10-W	– Amendment to Management Retention Agreement between the Registrant and Dr. John Barr dated December 23, 2008. <sup>(24)*</sup>
10-X	– Employment Letter Agreement with John B. Whelan, Chief Financial Officer dated as of February 9, 2008. <sup>(24)*</sup>
10-Y	– Development and License Agreement dated as of September 11, 2009, between the Registrant and Merial Limited. <sup>(25)</sup>
10-Z	– Securities Purchase Agreement, dated as of October 19, 2009, by and among the Registrant and the purchasers listed therein. <sup>(26)</sup>
10-AA	– Registration Rights Agreement, dated as of October 22, 2009, by and among the Registrant and the purchasers listed therein. <sup>(27)</sup>
10-AB	– Form of Warrant to Purchase Shares of Common Stock. <sup>(28)</sup>
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. <sup>(29)</sup>

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- 10-AD – Separation and Release Agreement between Ronald J. Prentki and the Registrant dated May 25, 2010 <sup>(30)\*</sup>
- 10-AE - Securities Purchase Agreement, dated as of April 24, 2011, by and among the Company and the purchasers listed therein. <sup>(32)</sup>
- 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. <sup>(33)</sup>
- 10-AG - Second Amendment to Lease, effective as of April 1, 2011, by and between the Company and Metropolitan Life Insurance Company. <sup>(34)</sup>
- 10-AH - Management Retention Agreement, dated as of April 25, 2011, by and between the Company and John B. Whelan. <sup>(35)</sup>
- 10-AI - Management Retention Agreement, dated as of April 25, 2011, by and between the Company and Michael A. Adam. <sup>(36)</sup>
- 10-AJ Securities Purchase Agreement, dated June 29, 2011, by and between A.P. Pharma, Inc. and the purchasers listed on Schedule I thereto. <sup>(37)</sup>
- 10-AK Amendment to Senior Secured Convertible Note Due 2021, dated June 29, 2011, by and between A.P. Pharma, Inc. and the purchasers named in the Securities Purchase Agreement, dated April 24, 2011, by and among A.P. Pharma, Inc. and the purchasers listed therein. <sup>(38)</sup>
- 23.1 – Consent of Independent Registered Public Accounting Firm.
- 23.2 – Consent of Ropes & Gray LLP (Filed with Exhibit 5.1 above).
- 24.1 – Power of Attorney (included on signature page)

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- <sup>(1)</sup> 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.
- <sup>(2)</sup> Filed as Exhibit 3.1 to Registrant’s Form 10-Q filed August 4, 2009, and incorporated herein by reference.
- <sup>(3)</sup> 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.
- <sup>(4)</sup> Filed as Exhibit 3.C to Registrant’s Form 8-K filed December 19, 2006, and incorporated herein by reference.
- <sup>(5)</sup> Filed as Exhibit 4.A to Registrant’s Form 8-K filed December 19, 2006, and incorporated herein by reference.
- <sup>(6)</sup> Filed as Exhibit 4.B to Registrant’s Form 8-K filed December 19, 2006, and incorporated herein by reference.
- <sup>(7)</sup> Filed as Exhibit 4.1 to Registrant’s Form 8-K filed October 7, 2008, and incorporated herein by reference.
- <sup>(8)</sup> 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.
- <sup>(9)</sup> Filed as Exhibit No. 28.1 to Registrant’s Registration Statement on Form S-8 (Registration No. 33-50640), and incorporated herein by reference.
- <sup>(10)</sup> 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.
- <sup>(11)</sup> 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.
- <sup>(12)</sup> Filed as Exhibit No. 99.1 to Registrant’s Registration Statement on Form S-8 (Registration No. 333-90428), and incorporated herein by reference.
- <sup>(13)</sup> Filed as Exhibit 10.AA to Registrant’s Form 10-Q filed November 7, 2006, and incorporated herein by reference.
- <sup>(14)</sup> Filed as Exhibit 10-Y to Registrant’s Form 10-Q filed May 15, 2006, and incorporated herein by reference.
- <sup>(15)</sup> Filed as Exhibit 10.14 to the Registrant’s Form 10-Q filed November 14, 2007 and incorporated herein by reference.
- <sup>(16)</sup> Filed as Exhibit 10.15 to the Registrant’s Form 10-Q filed November 14, 2007 and incorporated herein by reference.
- <sup>(17)</sup> Filed as Exhibit No 4.1 to Registrant’s Registration Statement on Form S-8 (Registration No. 333-148660) and incorporated herein by reference.
- <sup>(18)</sup> Filed as Exhibit no. 4.3 to Registrant’s Registration Statement on Form S-8 (Registration No 333-148660) and incorporated herein by reference.
- <sup>(19)</sup> Filed as Exhibit No 4.4 to Registrant’s Registration Statement on Form S-8 (Registration No. 333-148660), and incorporated herein by reference.
- <sup>(20)</sup> 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.

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- <sup>(21)</sup> Filed as Exhibit 10.16 to the Registrant's Form 10-Q dated November 14, 2007 and incorporated herein by reference.
- <sup>(22)</sup> Filed as Exhibit No. 99.2 to Registrant's Registration Statement on Form S-8 (Registration No. 333-90428), and incorporated herein by reference.
- <sup>(23)</sup> Filed as an Exhibit with corresponding Exhibit No. to the Registrant's Form 10-Q filed August 14, 2008, and incorporated herein by reference.
- <sup>(24)</sup> 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.
- <sup>(25)</sup> Filed as Exhibit 10.1 to the Registrant's Form 10-Q filed November 16, 2009 and incorporated herein by reference.
- <sup>(26)</sup> Filed as Exhibit 10.1 to the Registrant's Form 8-K filed on October 22, 2009 and incorporated herein by reference.
- <sup>(27)</sup> Filed as Exhibit 10.2 to the Registrant's Form 8-K filed on October 22, 2009 and incorporated herein by reference.
- <sup>(28)</sup> Filed as Exhibit 10.3 to the Registrant's Form 8-K filed on October 22, 2009 and incorporated herein by reference.
- <sup>(29)</sup> Filed as Exhibit 10.4 to the Registrant's Form 8-K filed on October 22, 2009 and incorporated herein by reference.
- <sup>(30)</sup> Filed as Exhibit 10.1 to the Registrant's Form 8-K filed on June 1, 2010 and incorporated herein by reference.
- <sup>(31)</sup> Filed as Exhibit 10.2 to the Registrant's Form 8-K filed on April 28, 2011 and incorporated herein by reference.
- <sup>(32)</sup> Filed as Exhibit 10.1 to the Registrant's Form 8-K filed on April 28, 2011 and incorporated herein by reference.
- <sup>(33)</sup> Filed as Exhibit 10.3 to the Registrant's Form 8-K filed on April 28, 2011 and incorporated herein by reference.
- <sup>(34)</sup> Filed as Exhibit 10.4 to the Registrant's Form 8-K filed on April 28, 2011 and incorporated herein by reference.
- <sup>(35)</sup> Filed as Exhibit 10.5 to the Registrant's Form 8-K filed on April 28, 2011 and incorporated herein by reference.
- <sup>(36)</sup> Filed as Exhibit 10.6 to the Registrant's Form 8-K filed on April 28, 2011 and incorporated herein by reference.
- <sup>(37)</sup> Filed as Exhibit 10.1 to the Registrant's Form 8-K filed on June 30, 2011 and incorporated herein by reference.
- <sup>(38)</sup> Filed as Exhibit 10.2 to the Registrant's Form 8-K filed on June 30, 2011 and incorporated herein by reference.
- \* Management contract or compensatory plans.



July 29, 2011

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

Ladies and Gentlemen:

This opinion letter is furnished to you in connection with your filing of a Registration Statement on Form S-1 (the "Registration Statement"), with the Securities and Exchange Commission under the Securities Act of 1933, as amended, for the registration of up to 240,000,011 shares of Common Stock, \$0.01 par value ("Common Stock"), of A.P. Pharma, Inc., a Delaware corporation (the "Company"), which consists of: (i) 160,000,006 shares of Common Stock (the "Shares") that were issued pursuant to a Securities Purchase Agreement, dated June 29, 2011, by and among the Company and the investors identified therein (the "Securities Purchase Agreement"), and (ii) 80,000,005 shares of Common Stock (the "Warrant Shares") issuable upon exercise of warrants issued pursuant to the Securities Purchase Agreement (the "Warrants").

We have reviewed such documents and made such examination of law as we have deemed appropriate to give the opinions expressed below. We have relied, without independent verification, on certificates of public officials and, as to matters of fact material to the opinions set forth below, on certificates of officers of the Company.

The opinion expressed below is limited to the Delaware General Corporation Law (which includes applicable provisions of the Delaware Constitution and reported judicial decisions interpreting the Delaware General Corporation Law and the Delaware Constitution).

Based on the foregoing, we are of the opinion that: (i) the Shares have been duly authorized and are validly issued, fully paid and non-assessable, and (ii) the Warrant Shares have been duly authorized and, upon issuance and delivery on exercise of the Warrants, will be validly issued, fully paid and non-assessable.

We hereby consent to the inclusion of this opinion as Exhibit 5.1 to the Registration Statement and to the references to our firm under the caption "Legal Matters" in the Registration Statement. In giving our consent, we do not admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations thereunder.

Very truly yours,

/s/ Ropes & Gray LLP

Ropes & Gray LLP

**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

We hereby consent to the incorporation by reference in the prospectus constituting a part of this Registration Statement on Form S-1 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 Registration Statement on Form S-1.

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

San Francisco, California

July 28, 2011