

PROSPECTUS

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 OTC Bulletin Board under the symbol "APPA.OB". On April 2, 2012, the last reported sale price per share of our Common Stock on the OTC Bulletin Board was \$0.41. 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 April 2, 2012

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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^(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 (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 New Drug Application (NDA) and are targeting the resubmission of the NDA for mid-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.

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 OTC Bulletin Board under the symbol "APPA.OB".

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 \$98,400,005, based on the last quoted sale price for our Common Stock of \$0.41 on April 2, 2012.

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, 2011 that is 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 8. 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.

Selling Stockholder (1)	Number of Shares Beneficially Owned before Offering	Number of Shares Covered by This Prospectus	Number of Shares Beneficially Owned after Offering(2)	Percentage of Shares Beneficially Owned after Offering(3)
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)	876,209	270,000	606,209	0.30%
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 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 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

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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) 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.
- (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.

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- (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.
- (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.

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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.

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 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:

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- 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 OTC Bulletin Board under the symbol “APPA.OB”.

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

OUM & 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, 2011, 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 OUM & 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 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, 2011 that have not been described in our Annual Report on Form 10-K, which is incorporated by reference herein, or this prospectus.

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 Company hereby incorporates by reference its Annual Report on Form 10-K for the fiscal year ended December 31, 2011, filed with the SEC on March 26, 2012.

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, or accessible through, our website is not incorporated into this prospectus.