Filed pursuant to Rule 424(b)(4)
Registration No. 333-115163

PROSPECTUS SUPPLEMENT
(To Prospectus dated June 24, 2004)

# A.P. PHARMA, INC.

4,183,335 Shares
Common Stock

We are offering up to 4,183,335 shares of our common stock through this prospectus supplement and the base prospectus (which was filed with our Registration Statement on Form S-3 on May 25, 2004, Registration No. 333-115163) at a fixed price of $3.00 per share to certain institutional investors. You should read both this prospectus supplement and the base prospectus carefully before you invest in our common stock.
Our common stock trades on the Nasdaq National Market under the symbol "APPA". On June 23, 2004, the last reported sale price of the common stock on the Nasdaq National Market was $3.13 per share.

INVESTING IN OUR COMMON STOCK INVOLVES RISKS. SEE "RISK FACTORS" BEGINNING ON PAGE S-8.

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

The date of this prospectus supplement is June 24, 2004

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Unless otherwise mentioned or unless the context requires otherwise, all references in this prospectus supplement and the accompanying prospectus to "the company", "A.P. Pharma", "we", "us", "our", or similar references mean A.P. Pharma, Inc.

This document is in two parts. The first part is this

prospectus supplement, which describes the terms of this offering of our common stock and also adds to and updates information contained in the accompanying prospectus and the documents incorporated by reference into the accompanying prospectus. The second part is the accompanying prospectus, which gives more general information about us and the shares of common stock we may offer from time to time under our shelf registration statement. To the extent there is a conflict between the information contained in this prospectus supplement, on the one hand, and the information contained in the accompanying prospectus or any document incorporated by reference therein, on the other hand, the information in this prospectus supplement shall control.

We have not authorized any dealer, salesman or other person to give any information or to make any representation other than those contained or incorporated by reference in this prospectus supplement and the accompanying prospectus. You must not rely upon any information or representation not contained or incorporated by reference in this prospectus supplement or the accompanying prospectus. This prospectus supplement and the accompanying prospectus do not constitute an offer to sell or the solicitation of an offer to buy common stock, nor do this prospectus supplement and the accompanying prospectus constitute an offer to sell or the solicitation of an offer to buy common stock in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction. You should not assume that the information contained in this prospectus supplement and the accompanying prospectus is accurate on any date subsequent to the date set forth on the front of the document or that any information we have incorporated by reference is correct on any date subsequent to the date of the document incorporated by reference, even though this prospectus supplement and any accompanying prospectus is delivered or common stock is sold on a later date.

## PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights selected information about us and this offering. This summary is not complete and does not contain all the information you should consider before investing in our common stock. You should carefully read this entire prospectus supplement and the accompanying prospectus, including the "Risk Factors", the financial statements and the other documents we refer to and incorporate by reference in this prospectus supplement and the accompanying prospectus, before making an investment decision. We incorporate by reference important business and financial information into the accompanying prospectus. See "Documents Incorporated by Reference" on page 11.

## OVERVIEW

We are a specialty pharmaceutical company focused on the development of pharmaceutical products utilizing our proprietary polymer-based drug delivery systems. We have made important progress since A.P. Pharma's transformation into a specialty pharmaceuticals company just three years ago. Our focus is the development and commercialization of bioerodible injectable and implantable systems under the trade name Biochronomer(TM). Product candidates based on our Biochronomer Systems enable us to address a broader spectrum of medical needs and potentially capture opportunities in large markets.

Our business focus is on developing our own product portfolio for surgical/orthopedic applications and maintaining control and management of Biochronomer-based product candidates through the early phases of clinical development. As clinical studies progress, we expect to establish corporate partnerships to complete the development process and commercialize successful drugs. Our ultimate goal is to retain rights in the U.S., while partners handle sales and distribution in international markets.

Our business strategy is twofold:

- to develop selected proprietary products, funding them through the preliminary phases of regulatory review before entering partnerships to share costs and future profits; and

- to license our proprietary technologies to corporate partners after the successful completion of reimbursed feasibility studies to earn research and development fees, licensing fees, milestone payments and royalties.

Initial targeted applications for our drug delivery technologies for our own product portfolio include pain management, as well as anti-nausea, anti-inflammatory and anti-infective applications. Potential licensing opportunities conducted through reimbursed feasibility studies include vaccines, ophthalmology applications, device coatings and DNA delivery. Product development programs are primarily funded by royalties from topical prescription products currently marketed by our pharmaceutical partners, Johnson & Johnson and Aventis, proceeds from the divestiture of our cosmeceutical and toiletry product lines in July 2000, fees we receive from collaborative partners, and proceeds from the sale of our Analytical Standards business in February 2003.

Bioerodible polymers are of increasing interest within the pharmaceutical and biotechnology community for use in both drug delivery applications and as devices. We have made substantial progress in developing our proprietary Biochronomer system that potentially represent a significant improvement over existing drug delivery systems. Over one hundred in vivo and in vitro studies have been completed to advance understanding of this innovative drug delivery technology. Importantly, the initial toxicology data indicate that the technology is safe for use in the body. Studies demonstrate complete and controlled bioerosion of the polymers. The major benefit is that our polymers have been specifically designed as drug delivery systems and are versatile. Erosion times can be varied from hours to days, weeks or months and mechanical properties can be adjusted to produce materials as diverse as injectable gels, coatings, strands, wafers, films or microspheres. In addition, the manufacturing is reproducible, has been scaled up under GMP conditions and the polymers are stable, provided they are stored under appropriate conditions. In studies, the polymers were observed to erode to completion and, once the drug was released, no polymer remained. In addition, the polymers bioerode with low acidity, thus potentially allowing the delivery of sensitive proteins and DNA.

Patents and Trade Secrets
- -------------------------

As part of our strategy to protect our current products and to provide a foundation for future products, we have filed a number of United States patent applications on inventions relating to specific products, product groups, and processing technology. We have also filed foreign patent applications on our polymer technology with the European Union, Japan, Australia, South Africa, Canada, Korea and Taiwan. We have a total of 15 issued United States patents and an additional 88 issued foreign patents. Currently, we have over 29 pending patent applications worldwide. The patents on the Microsponge(R) system expire between October 2005 and September 2021. The patents on the bioerodible systems expire between January 2016 and November 2021.

Products Under Development
- -------------------------
Our primary efforts in pharmaceutical markets involve applications using our Biochronomer technology that are under development, as summarized below.

Post-Surgical Pain
- ------------------
Our first product candidate (APF112) incorporates mepivacaine in the Biochronomer(TM) delivery system and targets the management of pain in patients following surgery. Mepivacaine is a well-known drug for localized pain relief, and it has an extensive safety protocol. Over time, we expect to evaluate a number of pain management applications for APF112. This product is designed to address major unmet needs in a $2 billion market for post-surgical pain. The fastest growing segment is pain relief for outpatients and those who undergo same-day in/out surgery. Among them, pain management following abdominal surgery and musculoskeletal surgery is our initial focus, with U.S. patient populations estimated at 7.6 million and 7.2 million, respectively, in 2003 alone. Initial clinical studies are being conducted in surgeries for inguinal hernia repair.

The treatment goal is to provide 24 to 36 hours of localized post-surgical pain relief by delivering mepivacaine directly to the surgical site. APF112 is designed to prolong the anesthetic effect of mepivacaine and thus to minimize or eliminate the use of opioids (morphine-like drugs) which are currently used in the majority of surgical procedures as a means of managing post-operative pain despite unpleasant side effects - nausea, disorientation, sedation, constipation, vomiting, urinary retention and, in some situations, life-threatening respiratory depression.

Part 2 of the Phase 2 human clinical study using APF112 for the treatment of post-surgical pain is ongoing. APF112 has been shown in Part 1 of the Phase 2 clinical study to sustain blood drug levels for up to 72 hours. Wound healing in all patients was observed to be normal and no adverse events were reported. The second part of the Phase 2 trial is a 90-patient blinded study comparing two doses of APF112 with current standard treatments for post-surgical pain. The end points for the trial include a visual analog score of pain intensity, the standard means of measuring pain, and reduction in the use of opioid-type medication by patients.

Chemotherapy-Induced Nausea and Vomiting
- ----------

Our second product candidate (APF530) is designed to provide three to five days of continuous relief for the prevention of chemotherapy-induced nausea and vomiting following a single subcutaneous injection.

APF530 combines A.P. Pharma's Biochronomer drug delivery system with granisetron, one of a class of 5-HT3 antagonists which have revolutionized the treatment of nausea and vomiting during and after chemotherapy. The drug is currently administered by intravenous (IV) injection, followed by oral administration for a number of days. Biochronomer delivery of granisetron is a potential alternative to the IV and subsequent oral administration in the $2 billion annual market for anti-emetics. In animal studies, APF530 incorporating the Biochronomer bioerodible drug delivery system demonstrated sustained release at constant and therapeutically equivalent blood drug levels.

The Company initiated a Phase 1 human clinical trial in April 2004 which will include 18 healthy volunteers at a single clinical site in the United Kingdom. A.P. Pharma is also finalizing pre-clinical work prior to filing an Investigational New Drug (IND) application in the U.S. that could allow the Company to go directly into U.S. Phase 2 studies in cancer patients with APF530.

Anti-Inflammatories
- ----------

Two product candidates at an early stage of development incorporate meloxicam in the Biochronomer system. They are designed to participate in the anti-inflammatory market. APF328 targets the post-surgical and orthopedic anti-inflammatory market and APF505 targets the osteoarthritis market.

Licensing Opportunities
- ----------

While our primary emphasis is on our own portfolio, we are also conducting feasibility studies of new product concepts based on our Biochronomer technology for other pharmaceutical and biotechnology companies. Those that prove promising could be out-licensed or partnered through product development and commercialization agreements.

We have entered into fee-paying feasibility studies with several companies to develop a variety of products using our Biochronomer(TM) delivery systems. These products are being developed in the areas of vaccines, ophthalmology, device coatings and DNA delivery. In general, these research and development arrangements provide for us to receive research and development fees from our collaborators. Three of these development programs have moved into in vivo testing and, if they are concluded successfully, could lead to licensing agreements under which a partner would pay for development costs and we would receive a license fee, research and development fees, milestone payments and a royalty upon a product's marketing

clearance and commercialization.

Approved Products
- -----------------
Commercialization agreements have provided us with long-term royalty streams. The following ethical dermatological products incorporating our Microsponge technology have already been developed and commercialized:

Retin-A Micro: In February 1997, we received FDA marketing clearance for Microsponge-entrapped tretinoin for improved acne treatment. Tretinoin has been marketed in the United States by Ortho Neutrogena (formerly Ortho Dermatological), a Johnson & Johnson ("J&J") subsidiary, under the brand name RETIN-A(R) since 1971. It has proven to be a highly effective topical acne medication. However, skin irritation among sensitive individuals can limit patient compliance with the prescribed therapy. We developed a new formulation of Retin-A containing Microsponge-entrapped tretinoin for acne treatment which we licensed to J&J. Our patent-protected approach to drug delivery reduces the potentially irritating side effects of tretinoin. This product has been marketed under the brand name Retin-A Micro(R) since March 1997.

Ortho launched this product in Canada during 2001 and has completed Phase 3 clinical trials in Europe. Additionally, Ortho received FDA marketing clearance in the United States for a second Retin-A Micro formulation, a low-dose version, and launched the product in July 2002. We receive royalty income based on the sales of this product until the expiration of the applicable patents in 2016.

Carac: In the fourth quarter of 2000, Dermik Laboratories, an Aventis company, received U.S. marketing clearance for our proprietary formulation containing Microsponge-entrapped 5-fluorouracil (5-FU) for the treatment of actinic keratoses. This product was launched under the trade name Carac(TM) in the first quarter of 2001. We receive royalties based on the sales of this product over the life of the applicable patents. In September 2003, a new formulation patent was issued by the U.S. Patent and Trademark office (USPTO) extending patent coverage for this use of our Microsponge formulation until 2021.

Government Regulation
- ---------------------

In order to clinically test, produce and sell products for human therapeutic use, mandatory procedures and safety evaluations established by the FDA and comparable agencies in foreign countries must be followed. The procedure for seeking and obtaining the required governmental clearances for a new therapeutic product includes preclinical animal testing to determine safety and efficacy, followed by human clinical testing. This can take many years and require substantial expenditures. In the case of third party agreements, we expect that our corporate partners will partially fund the testing and the approval process with guidance from us. We intend to seek the necessary regulatory approvals for our proprietary products as they are being developed.

Legal Proceedings
- -----------------

On October 22, 2003, Tristrata Technology, Inc. (Tristrata) filed an amended complaint joining A.P. Pharma, Inc. and other companies as defendants in Tristrata's action first filed July 12, 2002 against Cardinal Health, Inc. and others in the Federal District Court of Delaware. Tristrata's complaint alleges infringment of patents pertaining to alpha-hydroxyacids used in cosmetics. A.P. Pharma answered Tristrata's amended complaint on December 22, 2003. A.P. Pharma is vigorously defending this action. At this early stage of the proceedings we cannot state the amount, if any, which might be recovered by Tristrata from A.P. Pharma, Inc. In our opinion, this litigation should not have a material effect on our results of operations or financial condition.

## THE OFFERING

| | |
|---|---|
| Common stock offered by us | 4,183,335 shares |
| Common stock to be outstanding after this offering | 24,952,666 shares |
| Use of proceeds | We intend to use the proceeds of this offering for clinical trials, research and development expenses and general and administrative expenses See "Use of Proceeds" on page S-8. |
| Nasdaq National Market symbol | APPA |

The information above is based on 20,769,331 shares of common stock outstanding as of May 31, 2004. It does not include the following shares of common stock as of May 31, 2004:

- 2,163,810 shares of common stock issuable upon the exercise of stock options outstanding at a weighted average exercise price of $3.81 per share;
- 388,356 shares of common stock reserved for future issuance under our 2002 Equity Incentive Plan;
- 87,500 shares of common stock available for future issuance under our Non-Qualified Stock Option Plan; and
- 141,843 shares of common stock available for future issuance under our Employee Stock Purchase Plan.

Our address is 123 Saginaw Drive, Redwood City, California 94063, and our telephone number is (650) 366-2626.

## SUMMARY FINANCIAL DATA

We derived the following information from our audited financial statements for the years ended December 31, 2001 through 2003, and from our unaudited interim financial statements as of March 31, 2004 and for the three months ended March 31, 2003 and 2004. In the opinion of our management, our unaudited interim financial statements include all adjustments, consisting only of normal and recurring adjustments, considered necessary for a fair presentation of the financial information.

Operating results for the three months ended March 31, 2004 are not necessarily indicative of the results that may be expected for the year ending December 31, 2004 or any future periods. The following information is only a summary and should be read in conjunction with our financial statements and related notes incorporated by reference in the accompanying prospectus, and our historical financial statements and related notes contained in our annual reports, quarterly reports and other information on file with the Securities and Exchange Commission, or the SEC. For more details on how you can obtain our SEC reports and other information, you should read the section of this prospectus supplement entitled "Where You Can Find More Information".

The Pro Forma, As Adjusted balance sheet data below gives effect to the sale of our common stock in this offering, at an assumed offering price of $3.00 per share.

| | Year Ended December 31, | | | Three Months Ended March 31, | |
|---|---|---|---|---|---|
| | 2001 | 2002 | 2003 | 2003 | 2004 |
| Statement of Operations Data: | | | | | |
| Total Revenues | $ 3,265 | $ 4,670 | $ 4,848 | $ 1,106 | $ 1,180 |
| Total Operating Expenses | 10,595 | 9,723 | 11,460 | 2,980 | 3,759 |

| | | | | | |
|---|---|---|---|---|---|
| Interest and other, net | 1,192 | 658 | 404 | 76 | 29 |
| Loss from Continuing Operations | (6,138) | (4,395) | (6,208) | (1,798) | (2,550) |
| Gain (Loss) from Disposition of Discontinued Operations | 3,624 | 617 | 1,845 | 1,832 | (49) |
| Net Income (Loss) | (2,514) | (3,778) | (4,363) | 34 | (2,599) |
| Basic and Diluted Earnings (Loss) Per Common Share: | | | | | |
| Net Income (Loss) | $ (0.12) | $ (0.19) | $ (0.21) | $ 0.00 | $ (0.13) |
| Shares used in Calculating Net Income (Loss) Per Share: | | | | | |
| Basic | 20,276 | 20,409 | 20,553 | 20,475 | 20,653 |
| Diluted | 20,276 | 20,409 | 20,553 | 20,516 | 20,653 |

| | As of March 31, 2004 | |
|---|---|---|
| | Actual | Pro Forma, As Adjusted |
| Balance Sheet Data: | | |
| Cash, Cash Equivalents and Marketable Securities | $ 7,744 | $19,617 |
| Total Assets | 11,267 | 23,140 |
| Long-term debt, non-current portion | 0 | 0 |
| Stockholders' Equity | $ 8,748 | $20,621 |

- ----------

## RISK FACTORS

Investment in our common stock involves a high degree of risk. In addition to the risks described below, you should carefully consider the specific factors set forth under the caption "Risk Factors" in the accompanying prospectus beginning on page 4, together with all of the information appearing in this prospectus supplement and incorporated by reference into this prospectus supplement and the accompanying prospectus, before making a decision to purchase our common stock. Each of these risk factors could adversely affect our business, operating results and financial condition, as well as adversely affect the value of an investment in our securities.

### Risks Related to this Offering

**You will experience immediate dilution in the book value per share of the common stock you purchase.**

Because the price per share of our common stock being offered is substantially higher than the book value per share of our common stock, you will suffer substantial dilution in the net tangible book value of the common stock you purchase in this offering. Based on an assumed offering price of $3.00 per share, if you purchase shares of common stock in this offering, you will suffer immediate and substantial dilution of $2.17 per share in the net tangible book value of the common stock. See "Dilution" below for a more detailed discussion of the dilution you will incur if you purchase common stock in this offering.

**Our stock price is highly volatile and you may not be able to resell your shares at or above the price you pay for them.**

The market price of our common stock has been, and is likely

to continue to be, highly volatile. The following factors, among others, could have a significant impact on the market price of our common stock:

- The factors listed in the accompanying prospectus under "Risk Factors";
- announcements by us of significant acquisitions, strategic partnerships, joint ventures or capital commitments;
- public concern as to the safety of new technologies;
- unfavorable announcements by us or favorable announcements by our competitors;
- comments made by analysts, including changes in, or failure to achieve, financial estimates made by securities analysts;
- future sales of equity or debt securities by us; and
- sales of our common stock by our directors, officers or significant shareholders.

In addition, the stock market in general, the Nasdaq National Market and the market for biotechnology and pharmaceutical stocks in particular, have experienced significant price and volume fluctuations. Volatility in the market price for particular companies has often been unrelated or disproportionate to the operating performance of those companies. These broad market and industry factors might seriously harm the market price of our common stock, regardless of our operating performance. In addition, securities class action litigation has often been initiated following periods of volatility in the market price of a company's securities. A securities class action suit against us could result in substantial costs, potential liabilities and the diversion of management's attention and resources.

Provisions in our charter documents and under Delaware law could prevent or delay a change of control, which could reduce the market price of our common stock.

The terms of our certificate of incorporation and share right agreement permit our Board of Directors to issue shares of preferred stock and determine the price, rights, preferences, privileges, and restrictions, including voting rights, of those shares without any further vote or action by our stockholders. The Board may authorize the issuance of preferred stock with voting or conversion rights that could materially weaken the voting power or other rights of the holders of our common stock. The issuance of preferred stock, while providing desirable flexibility in connection with possible acquisitions and other corporate purposes, could make it more difficult for a third party to acquire a majority of our outstanding voting stock.

Certain other provisions of our certificate of incorporation, our bylaws, and the Delaware law may be deemed to have an anti-takeover effect and could discourage a third party from acquiring, or make it more difficult for a third party to acquire, control of us without approval of our board of directors. These provisions and provisions of the Delaware law may discourage, delay or prevent a third party from acquiring us. These provisions could also limit the price that certain investors might be willing to pay in the future for shares of our common stock.

Management will have broad discretion as to the use of the proceeds from this offering, and we may not use the proceeds effectively.

We have not designated the amount of net proceeds we will use for any particular purpose. Accordingly, our management will have broad discretion as to the application of the net proceeds and could use them for purposes other than those contemplated at the time of this offering. Our shareholders may not agree with the manner in which our management chooses to allocate and spend the net proceeds. Moreover, our management may use the net proceeds for corporate purposes that may not increase our market value or make us profitable.

A large number of shares may be sold in the market following this offering, which may depress the market price of our stock.

Sales of a substantial number of shares of our common stock in the public market following this offering could cause the market price of our common stock to decline. If there are more shares of common stock offered for sale than buyers are willing to purchase, then the market price of our common stock may decline to a market price at which buyers are willing to purchase the offered shares of common stock and sellers remain willing to sell the shares. All of the shares sold in the offering will be freely tradeable without restriction or further registration under the Securities Act, except for any shares purchased by our "affiliates" as defined in Rule 144 of the Securities Act.

## FORWARD-LOOKING INFORMATION

This prospectus supplement, the accompanying prospectus and the documents incorporated by reference in the accompanying prospectus include forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. We have based these forward-looking statements on our current expectations and projections about future events. Our actual results could differ materially from those discussed in, or implied by, these forward-looking statements. Forward-looking statements are identified by words such as "believe", "anticipate", "expect", "intend", "plan", "will", "may" and other similar expressions. In addition, any statements that refer to expectations, projections or other characterizations of future events or circumstances are forward-looking statements. Forward-looking statements include, but are not necessarily limited to, those relating to:

- results and timing of our clinical trials and publication of those results;
- our expectations regarding obtaining FDA approval to market our products;
- our intent to continue investing in our technologies and our facilities;
- our ability to obtain a marketing partner for our products;
- our expectations regarding the level of our future research and development expenses;
- our plans to retain marketing or co-marketing rights to certain of our product candidates;
- our plans or ability to develop other product candidates; and
- our expectations to receive research and development funding, payments, fees and royalties through our collaborations.

Factors that could cause actual results or conditions to differ from those anticipated by these and other forward-looking statements include those more fully described in the "Risk Factors" section of the accompanying prospectus and elsewhere in this prospectus. We are not obligated to update or revise these forward-looking statements to reflect new events or circumstances.

## USE OF PROCEEDS

Assuming a public offering price of $3.00, we estimate that the net proceeds we will receive from this offering will be approximately $11.8 million, after deducting the placement agent fees and estimated offering expenses. We will retain broad discretion over the use of the net proceeds from the sale of our common stock offered hereby. We currently anticipate using the net proceeds from the sale of our common stock hereby primarily for:

- clinical trials;
- research and development expenses;

o general and administrative expenses.

The amounts and timing of the expenditures may vary significantly depending on numerous factors, such as the progress of our research and development efforts, technological advances and the competitive environment for our products.

Pending the use of the net proceeds, we intend to invest the net proceeds in short-term, interest-bearing, investment-grade securities.

## CAPITALIZATION

The following table sets forth our capitalization as of March 31, 2004:

o on an actual basis; and

o on a pro forma, as adjusted basis, to give effect to the sale of 4,183,335 shares of common stock offered by us in this offering, assuming a public offering price of $3.00 per share in this offering and after deducting the placement agent's discounts and commissions and estimated offering expenses payable by us.

| | As of March 31, 2004 | |
|---|---|---|
| | Actual | Pro Forma, As Adjusted |
| Capitalization: | | |
| Cash, Cash Equivalents and Marketable Securities | $ 7,744 | $19,617 |
| Long-term debt, non-current portion | 0 | |
| Stockholders' Equity | | |
| Preferred Stock, 2,500,000 shares authorized; issued or outstanding: none-Actual; none-Pro Forma | 0 | 0 |
| Common stock, $.01 par value, 50,000,000 authorized; issued and outstanding: 20,675,843 - Actual; 24,859,178 - Pro Forma, as adjusted | 207 | 249 |
| Additional paid in capital | 86,729 | 98,560 |
| Accumulated deficit | (78,197) | (78,197) |
| Accumulated other comprehensive income | 9 | 9 |
| Total stockholders' equity | $ 8,748 | $20,621 |
| Total capitalization | $16,492 | $40,238 |

Information in the table above excludes the following shares of common stock as of March 31, 2004:

o 2,197,312 shares of common stock issuable upon the exercise of options outstanding with a weighted average exercise price of $3.88 per share;

o 48,356 shares available for future issuance under our 2002 Equity Incentive Plan;

o 97,500 shares available for future issuance under our Non-Qualified Stock Option Plan;

o 92,593 shares available for future issuance under our Employee Stock Purchase Plan.

## DILUTION

Our net tangible book value as of March 31, 2004 was approximately $8.7 million, or $0.42 per share of common stock. Net tangible book value per share is calculated by subtracting our total liabilities from our total tangible assets, which is total assets less intangible assets, and dividing this amount by the number of shares of common stock outstanding. After giving effect to the sale by us of the 4,183,335 shares of common stock offered in this offering, assuming a public offering price of $3.00 per share and after deducting the placement agent fees and estimated offering expenses payable by us, our pro forma net tangible book value as of March 31, 2004 would have been $20.6 million, or $0.83 per share of common stock. This represents an immediate increase in the net tangible book value of $0.41 per share to our existing shareholders and an immediate and substantial dilution in net tangible book value of $2.17 per share to new investors. The following table illustrates this per share dilution:

| | | |
|---|---|---|
| Assumed public offering price per share | | $3.00 |
| Net tangible book value per share as of March 31, 2004 | $0.42 | |
| Increase per share attributable to new investors | $0.41 | |
| Pro forma net tangible book value per share after this offering as of March 31, 2004 | | $0.83 |
| Dilution per share to new investors | | $2.17 |

Information in the table above excludes the following dilutive securities outstanding as of March 31, 2004;

- 2,197,312 shares of common stock issuable upon the exercise of options outstanding with a weighted average exercise price of $3.88 per share;
- 48,356 shares available for future issuance under our 2002 Equity Incentive Plan;
- 97,500 shares available for future issuance under our Non-Qualified Stock Option Plan;
- 92,593 shares available for future issuance under our Employee Stock Purchase Plan.

## MANAGEMENT

The following is biographical information for our officers and each member of our board of directors:

| Name | Age | Position with Company |
|---|---|---|
| Michael O'Connell | 54 | President and Chief Executive Officer |
| Gordon Sangster | 51 | Chief Financial Officer, Vice President of Finance |
| John Barr, Ph.D. | 44 | Vice President of Research and Development |
| Paul Goddard, Ph.D. | 54 | Chairman |
| Stephen A. Drury | 66 | Director |
| Peter Riepenhausen | 67 | Director |
| Toby Rosenblatt | 65 | Director |
| Gregory Turnbull | 65 | Director |
| Dennis Winger | 56 | Directors |
| Robert Zerbe, M.D. | 53 | Director |

Michael O'Connell -- director since May 2001 and Chief Executive Officer and President of A.P. Pharma since August 2000; he originally joined A.P. Pharma in July 1992 as Vice President and Chief Financial Officer. From 1980 to 1992, Mr. O'Connell served with The Cooper Companies, Inc. (formerly CooperVision, Inc.) in a number of financial positions including Vice President and corporate controller. Mr. O'Connell is a Fellow of the Institute of Chartered Accountants of England and Wales.

Gordon Sangster -- Chief Financial Officer, joined A.P. Pharma in 1993 as corporate controller. He became Vice President of Finance in 1994 and Chief Financial Officer in August 2000. Prior to joining A.P. Pharma, Mr. Sangster spent five years in a variety of corporate and international financial roles at Raychem, Inc. Previously, Mr. Sangster held financial positions at the Cooper Companies and at CooperVision, where he was international controller. Mr. Sangster is a member of the Institute of Chartered Accountants of England and Wales.

John Barr, Ph.D. -- Vice President, Research and Development, joined A.P. Pharma in 1997 as director of Pharmaceutical Sciences. He was promoted to his current position in August 2000. Prior to joining A.P. Pharma, he worked as the director of Biopharmaceutics for Cortech, Inc. a Denver-based biotech firm focused on the development of novel anti-inflammatory agents. In that capacity, he was involved with both the research and development aspects of the company's intravenous and oral programs. Dr. Barr received his Ph.D. in pharmacology from the University of Glasgow in Scotland, after which he pursued postdoctoral studies at the University of Arizona.

Paul Goddard, Ph.D. -- chairman of A.P. Pharma board of directors since November 2000. From 1998 to 2000, Dr. Goddard was President and Chief Executive Officer of Elan's pharmaceutical division. From 1991 to 1998 Dr. Goddard served as Chairman and Chief Executive Officer of Neurex Corporation. In 1998, Neurex was acquired by Elan. Prior to Neurex, Dr. Goddard held various senior management positions at SmithKline Beecham. Dr. Goddard also serves as Chairman of the Board for ARYx Therapeutics, Inc. and Xenoport, Inc., and as a director for Adolor, Inc., Molecular Devices, Inc. and Onyx Pharmaceuticals, Inc.

Stephen A. Drury -- director of A.P. Pharma since May 1999. Mr. Drury is currently a healthcare financial advisor and a private investor. Prior to his retirement in 1997, he was Executive Vice President and a director of Owen Healthcare from 1992 and Senior Vice President and Chief Financial Officer of Integrated Health Services, Inc. from 1989 until 1992. Prior to that, Mr. Drury served as Senior Vice President of Thomson McKinnon Securities and managing director of its Healthcare Capital Markets Group from 1985 to 1989.

Peter Riepenhausen -- director of A.P. Pharma since April 1991. Mr. Riepenhausen is a business consultant. He was chairman, Europe for Align Technology, Inc. from 2000 until 2002 and President and Chief Executive Officer of ReSound Corporation from 1994 to 1998. He served as a director of Caradon (Europe) plc from April 1994 until September 1998. He serves as a director of Audimed Gmbh and The Resource Group (TRG).

Toby Rosenblatt -- director of A.P. Pharma since September 1983. Mr. Rosenblatt is President of Founders Investments, Ltd. which is involved in private investment activities. Mr. Rosenblatt also serves as a director of State Street Research Mutual Funds and Met Life Series Mutual Funds and is a trustee of numerous civic and educational institutions.

Gregory Turnbull -- director of A.P. Pharma since February 1986. Mr. Turnbull is currently a business consultant. Previously, he was a general partner of Cable & Howse Ventures, a venture capital firm, and also served as an investment banker with Morgan Stanley & Co. and White, Weld & Co. Mr. Turnbull serves as a director of Planar Systems, Inc.

Dennis Winger -- director of A.P. Pharma since February 1993. Mr. Winger is Senior Vice President and Chief Financial Officer of Applera Corporation. From 1989 to 1997, Mr. Winger was Senior Vice President, Finance and Administration and Chief Financial Officer of Chiron Corporation. He currently serves as a director of Cell Genesys and Cephalon, Inc.

Robert Zerbe, M.D. -- director of A.P. Pharma since December 2002. Dr. Zerbe is the Chief Executive Officer and founder of QuatRx Pharmaceuticals Company, a private biopharmaceutical company. Until 2000, Dr. Zerbe was employed by Pfizer as the Senior Vice President of Global Research and Development and Director of Development Operations. From 1993 to 2000, Dr. Zerbe served at the Parke-Davis Pharmaceutical Research Division of Warner-Lambert as Senior Vice President worldwide, clinical

research and development. Dr. Zerbe serves as a director of Maxim Pharmaceuticals, Inc.

## PLAN OF DISTRIBUTION

We are directly selling to certain institutional investors up to 4,183,335 shares of our common stock under this prospectus supplement at a fixed price of $3.00 per share. We have negotiated with these purchasers regarding the sale of the shares.

Pursuant to an engagement letter dated June 7, 2004, we engaged Olympus Securities, LLC, to act as our non-exclusive placement agent in connection with offerings of securities under our shelf registration statement, of which this prospectus supplement is a part. Under the terms of the engagement letter, Olympus Securities, LLC has agreed to provide assistance in connection with the issuance and sale by us of the shares in this offering and in possible future takedowns of securities from the registration statement. The terms of any future offerings will be subject to market conditions and negotiations among us, Olympus Securities, LLC and prospective purchasers. The engagement letter does not give rise to any commitment by Olympus Securities, LLC to purchase any securities, and Olympus Securities, LLC will have no authority to bind us by virtue of the engagement letter.

With respect to this offering, we have agreed to pay Olympus Securities, LLC compensation as follows:

- a placement fee equal to 5% of gross proceeds of the sale of shares of common stock in the offering; and
- reimbursement of certain out-of-pocket expenses.

With respect to this offering, we have agreed to reimburse an aggregate of $15,000 in purchaser legal fees and expenses.

We will not pay any other compensation in connection with the sale of the shares pursuant to this prospectus supplement.

We have agreed to indemnify Olympus Securities, LLC against certain liabilities arising in connection with the engagement, including liabilities under federal securities laws.

We have agreed to indemnify each of the investors, and each of the investors' affiliates, employees, officers, directors, agents, and partners, against certain liabilities arising in connection with the engagement, including liabilities under federal securities laws.

## LEGAL MATTERS

The validity of the shares offered hereby will be passed upon for us by Heller Ehrman White & McAuliffe, LLP, Palo Alto, California, counsel to the company. Julian N. Stern, the Secretary of the company, is the owner of 170,335 shares of common stock and is the sole stockholder and employee of a professional corporation that was a partner of a predecessor of Heller Ehrman White & McAuliffe LLP.

## WHERE YOU CAN FIND MORE INFORMATION

We are subject to the informational requirements of the Securities Exchange Act of 1934, as amended, and in accordance therewith file reports, proxy statements and other information with the Securities and Exchange Commission. Our filings are available to the public over the Internet at the Securities and Exchange Commission's website at http://www.sec.gov. You may also read and copy, at prescribed rates, any document we file with the Securities and Exchange Commission at the Public Reference Room of the Securities and Exchange Commission located at 450 Fifth Street, N.W., Washington, D.C. 20549. Please call the Securities and Exchange Commission at (800) SEC-0330 for further information on the Securities and Exchange Commission's Public Reference Room.

PROSPECTUS

# A.P. PHARMA, INC.

$15,000,000

Common Stock

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The shares of common stock of A.P. Pharma, Inc. covered by this prospectus may be offered and sold to the public from time to time in one or more issuances.

Our common stock trades on the Nasdaq National Market under the symbol "APPA". On May 3, 2004, the last reported sale price of the common stock on the Nasdaq National Market was $3.28 per share.

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission utilizing a "shelf" registration process. This prospectus provides you with a general description of the shares that we may offer in one of more offerings. Each time we offer shares, we will provide a supplement to this prospectus that will contain more specific information about the terms of that offering. We may also add, update or change in the prospectus supplement any of the information contained in this prospectus. This prospectus may not be used to sell any of our common stock unless accompanied by a prospectus supplement. You should read both this prospectus and any prospectus supplement together with additional information described under the heading "Where You Can Find More Information" before you make your investment decision.

The aggregate offering price of all common stock sold under this prospectus will not exceed $15,000,000.

Beginning on page 4, we have listed several "RISK FACTORS" which you should consider. You should read the entire prospectus carefully before you make your investment decision.

We may sell shares to or through underwriters or dealers, through agents, or directly to investors.

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The Securities and Exchange Commission and state regulatory authorities have not approved or disapproved these securities, or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

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The Date of this Prospectus is June 24, 2004

## ABOUT THIS PROSPECTUS

We have not authorized any dealer, salesman or other person to give any information or to make any representation other than those contained or incorporated by reference in this prospectus and the accompanying supplement to this prospectus. You must not rely upon any information or representation not contained or incorporated by reference in this prospectus or the accompanying prospectus supplement. This prospectus and the accompanying supplement to this prospectus do not constitute an offer to sell or the solicitation of an offer to buy common stock, nor do this prospectus and the accompanying supplement to this prospectus constitute an offer to sell or the solicitation of an offer to buy common stock in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction. You should not assume that the information contained in this prospectus and the accompanying prospectus supplement is accurate

on any date subsequent to the date set forth on the front of the document or that any information we have incorporated by reference is correct on any date subsequent to the date of the document incorporated by reference, even though this prospectus and any accompanying prospectus supplement is delivered or common stock is sold on a later date.

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, or SEC, using a "shelf" registration process. Under this shelf registration process, we may, from time to time, issue and sell to the public any part of the shares described in this prospectus in one or more offerings up to a total dollar amount of $15,000,000.

This prospectus provides you with a general description of the common stock we may offer. Each time we sell the common stock, we will provide a prospectus supplement containing specific information about the terms of that offering. The prospectus supplement may also add, update or change information in this prospectus or in documents incorporated by reference in this prospectus. To the extent that any statement that we make in a prospectus supplement is inconsistent with statements made in this prospectus or in documents incorporated by reference in this prospectus, the statements made or incorporated by reference in this prospectus will be deemed modified or superseded by those made in the prospectus supplement. You should carefully read both this prospectus and any prospectus supplement together with the additional information described under the heading "Where You Can Find More Information" before buying any common stock in this offering.

The registration statement containing this prospectus, including exhibits to the registration statement, provides additional information about us and the common stock offered under this prospectus. The registration statement can be read at the SEC web site or at the SEC offices mentioned under the heading "Where You Can Find More Information".

In this prospectus, the "company", the "Registrant", "A.P. Pharma", "APP", "we", "us" and "our" refer to A.P. Pharma, Inc.

## ABOUT THE COMPANY

We are a specialty pharmaceutical company focused on the development of pharmaceutical products utilizing our proprietary polymer-based drug delivery systems. Our focus is the development and commercialization of our patented bioerodible injectable and implantable systems under the trade name Biochronomer(TM).

Our business strategy is twofold:

- to develop selected proprietary products, funding them through the preliminary phases of regulatory review before entering into partnerships to share costs and to earn a share of future profits; and

- to license our proprietary technologies to corporate partners after the successful completion of reimbursed feasibility studies to earn research and development fees, licensing fees, milestone payments and royalties.

Initial targeted areas of application for our drug delivery technologies include pain management; anti-nausea, anti-inflammatory, anti-infective, oncology and ophthalmology applications; device coatings and DNA delivery. Product development programs have been funded primarily by royalties from topical prescription products currently marketed by our pharmaceutical partners, Johnson & Johnson and Aventis, proceeds from the divestiture of our cosmeceutical and toiletry product lines in July 2000, fees we receive from collaborative partners, and proceeds from the sale of our Analytical Standards business in February 2003.

Bioerodible polymers are of increasing interest within the pharmaceutical and biotechnology community for use in both drug delivery applications and as devices. We have made substantial progress in developing the Biochronomer bioerodible polymers that

potentially represent a significant improvement over existing drug delivery systems. A major point of difference with other delivery systems is that our polymers have been specifically designed as drug delivery systems and are versatile. Over one hundred in vivo and in vitro studies have been completed to advance understanding of this innovative drug delivery technology. Importantly, the initial toxicology data indicate that the technology is safe for use in humans. Studies demonstrate complete and controlled bioerosion of the polymers. Erosion times can be varied from hours to days, weeks or months and mechanical properties can be adjusted to produce materials as diverse as injectable gels, coatings, strands, wafers, films or microspheres. In addition, the manufacturing is reproducible, has been scaled up under GMP conditions and the polymers are stable, provided they are stored under appropriate conditions. In studies, the polymers were observed to erode to completion and, once the drug was released, no polymer remained. In addition, the polymers bioerode with low acidity, thus potentially allowing the delivery of sensitive proteins and DNA.

Our first Biochronomer product candidate is APF112 for the treatment of post-surgical pain. APF112 incorporates the well-known analgesic mepivacaine in our Biochronomer system. It is designed to provide 24 to 36 hours of post-surgical pain relief and to minimize the use of morphine-like drugs (opioids) which are used extensively in post-surgical pain management. Opioids are associated with a wide range of side effects, such as nausea, sedation, dizziness, constipation, vomiting, urinary retention, and in some situations, life-threatening respiratory depression. We completed Phase 1 human clinical trials for APF112 in 2002. In 2003, we initiated Phase 2 clinical trials. Our initial target is pain management following inguinal hernia repair. The first part of the trial was an open-label study which was successfully completed. Results of the Part 1 study indicate that the pharmacokinetic measurements demonstrated meaningful levels of mepivacaine over a three day period consistent with observations made in preclinical studies with APF112. No severe or serious adverse events were reported and wound healing in all patients was observed to be normal over a 30-day follow-up period. The second part of the Phase 2 trial which is currently ongoing is a blinded study involving 90 patients and compares two doses of APF112 with the current standard treatment for post-surgical pain. The endpoints for the trial will include a visual analog score of pain intensity, the standard means of measuring pain, and reduction in use of opioid-type pain medication by patients. We believe that more than 20 million surgical procedures are performed annually in the U.S. which could benefit from this product.

Our second product candidate is APF530 for the prevention of nausea and vomiting following chemotherapy or surgery. We commenced human clinical trials in the second quarter of 2004. Using the Company's proprietary Biochronomer(TM) bioerodible drug delivery system, APF530 is designed to provide three to five days of continuous relief from chemotherapy-induced nausea and vomiting following a single subcutaneous injection. APF530 combines A.P. Pharma's Biochronomer drug delivery system with granisetron, one of a class of 5-HT3 antagonists which have revolutionized the treatment of nausea and vomiting during and after chemotherapy. The drug is currently administered by intravenous (IV) injection, followed by oral administration for a number of days. Biochronomer delivery of granisetron is a potential alternative to the IV and subsequent oral administration in the $2 billion annual market for anti-emetics. In animal studies, APF530 utilizing the Biochronomer bioerodible drug delivery system demonstrated sustained release at constant and therapeutically equivalent blood drug levels. The initial clinical study is designed to determine the safety and tolerability of APF530, and will include approximately 18 healthy volunteers at a single clinical site in the United Kingdom. A.P. Pharma is also finalizing pre-clinical work prior to filing an Investigational New Drug (IND) application in the U.S. that could allow the Company to go directly into U.S. Phase 2 studies in cancer patients with APF530.

We have also entered into fee-paying feasibility studies with several companies to develop a variety of products using our Biochronomer(TM) delivery systems. These products are being developed in the areas of vaccines, ophthalmology, device coatings and DNA delivery. In general, these research and development arrangements provide for us to receive research and

development fees from our collaborators. Three of these development programs have moved into in vivo testing and, if they are concluded successfully, could lead to licensing agreements under which a partner would pay for development costs and we would receive a license fee, research and development fees, milestone payments and a royalty upon a product's marketing clearance and commercialization.

In February 1997, we received FDA marketing clearance for our first pharmaceutical product based on our original patented Microsponge(R) technology, Retin-A Micro(R), which was licensed to Ortho Neutrogena, a member of the Johnson & Johnson family of companies. This product was launched in the United States in March 1997. Retin-A Micro was also launched in Canada in the third quarter of 2001 and Phase 3 clinical trials were completed in Europe in 2002. In May 2002, the FDA granted marketing clearance for a new low-dose formulation of Retin-A Micro, which was launched in the U.S. in July 2002. The Company is eligible to receive royalty income based on sales of these products over the life of the applicable patents, until 2016.

We licensed to Dermik Laboratories, an Aventis company, a Microsponge-based formulation incorporating 5-fluorouracil (5-FU) for the treatment of actinic keratoses, a precancerous skin condition. The product was launched in the first quarter of 2001 under the brand name Carac(TM). This product has a number of advantages over other topical therapies, including less irritation with shorter duration of therapy and reduced dosage frequency. The Company is eligible to receive royalty income based on the sales of this product over the life of the applicable patents, until 2021.

In February 2003, we sold the assets of our wholly-owned subsidiary, APS Analytical Standards, Inc., to GFS Chemicals of Columbus, Ohio, for $2.1 million in cash and the right to receive royalties for the next five years. The Company, founded in February 1983 as a California corporation under the name AMCO Polymerics, Inc., changed its name to Advanced Polymer Systems, Inc. in 1984 and was reincorporated in Delaware in 1987. The name was changed to A.P. Pharma, Inc. in May 2001 to reflect the new pharmaceutical focus of the Company.

## FORWARD-LOOKING INFORMATION

Statements made in this prospectus or in the documents incorporated by reference herein that are not statements of historical fact 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"). A number of risks and uncertainties, including those discussed under the caption "Risk Factors" below and the documents incorporated by reference herein could affect such forward-looking statements and could cause actual results to differ materially from the statements made.

## RISK FACTORS

You should consider carefully the following risk factors, along with other information contained or incorporated by reference in this prospectus, in deciding whether to invest in our securities. These factors, among others, may cause actual results, events or performances to differ materially from those expressed in any forward-looking statements we made in this prospectus.

### Our bioerodible drug delivery system business is at an early stage of development.

Our bioerodible drug delivery system business is at an early stage of development. Our ability to produce bioerodible drug delivery systems that progress to and through clinical trials is subject to, among other things:

- success with our research and development efforts;

- selection of appropriate therapeutic compounds for delivery;

- the required regulatory approval.

Successful development of delivery systems will require significant preclinical and clinical testing prior to regulatory approval in the United States and elsewhere. In addition, we will need to determine whether any potential products can be manufactured in commercial quantities at an acceptable cost. Our efforts may not result in a product that can be marketed. Because of the significant scientific, regulatory and commercial milestones that must be reached for any of our research programs to be successful, any program may be abandoned, even after significant resources have been expended.

We will need additional capital to conduct our operations and to develop our products and our ability to obtain the necessary funding on favorable terms in the future is uncertain.

We will require additional capital resources in order to conduct our operations and develop our products. While we estimate that our existing capital resources, royalty income and interest income will be sufficient to fund our current level of operations for at least the next year based on current business plans, we cannot guarantee that this will be the case. The timing and degree of any future capital requirements will depend on many factors, including:

- continued scientific progress in our research and development programs;

- the magnitude and scope of our research and development programs;

- our ability to establish and maintain strategic collaborations or partnerships for research, development, clinical testing, manufacturing and marketing;

- our progress with preclinical and clinical trials;

- the time and costs involved in obtaining regulatory approvals;

- the costs involved in preparing, filing, prosecuting, maintaining, defending and enforcing patent claims.

We intend to acquire additional funding through strategic collaborations, in the form of license fees, research and development fees and milestone payments. In the event that additional funds are obtained through arrangements with collaborative partners, these arrangements may require us to relinquish rights to some of our technologies, product candidates or products that we would otherwise seek to develop and commercialize ourselves. If sufficient funding is not available, we may be required to delay, reduce the scope of or eliminate one or more of our research or development programs, each of which could have a material adverse effect on our business.

If we are unable to recruit and retain skilled employees, we may not be able to achieve our objectives.

Retaining our current employees and recruiting qualified scientific personnel to perform future research and development work will be critical to our success. Competition is intense for experienced scientists, and we may not be able to retain or recruit sufficient skilled personnel to allow us to pursue collaborations and develop our products and core technologies to the extent otherwise possible.

We are reliant on single source third party contractors for the manufacture and production of raw materials and product candidates.

We currently, and for the foreseeable future will, rely upon outside contractors to manufacture, supply and package for us key intermediates, active pharmaceutical ingredients and formulated drug product for our product candidates. Our current dependence upon others for the manufacture of our raw materials and product candidates and our anticipated dependence upon others for the manufacture of any products that we may develop, may adversely affect our ability to develop our product candidates in a timely manner and may adversely affect future profit margins and our ability to commercialize any products that we may develop on a timely and competitive basis.

Entry into clinical trials with one or more products may not result in any commercially viable products.

We do not expect to generate any significant revenues from product sales for a period of several years. We may never generate revenues from product sales or become profitable because of a variety of risks inherent in our business, including risks that:

- clinical trials may not demonstrate the safety and efficacy of our products;

- we need to perform extensive final formulation and stability work on our polymer and product candidates and if this is unsuccessful, our product candidates may not be commercially viable;

- completion of clinical trials may be delayed, or costs of clinical trials may exceed anticipated amounts;

- we may not be able to obtain regulatory approval of our products, or may experience delays in obtaining such approvals;

- we and our licensees may not be able to successfully market our products.

Because we or our collaborators must obtain regulatory approval to market our products in the United States and foreign jurisdictions, we cannot predict whether or when we will be permitted to commercialize our products.

Federal, state and local governments in the United States and governments in other countries have significant regulations in place that govern many of our activities. The preclinical testing and clinical trials of the products that we develop ourselves or that our collaborators develop are subject to government regulation and may prevent us from creating commercially viable products from our discoveries. In addition, the sale by us or our collaborators of any commercially viable product will be subject to government regulation from several standpoints, including the processes of:

- manufacturing;

- advertising and promoting;

- selling and marketing;

- labeling; and

- distributing.

We may not obtain regulatory approval for the products we develop and our collaborators may not obtain regulatory approval for the products they develop. Regulatory approval may also entail limitations on the indicated uses of a proposed product.

The regulatory process, particularly for biopharmaceutical products like ours, is uncertain, can take many years and requires the expenditure of substantial resources. Any product that we or our collaborative partners develop must receive all relevant regulatory agency approvals or clearances, if any, before it may be marketed in the United States or other countries. In particular, human pharmaceutical therapeutic products are subject to rigorous preclinical and clinical testing and other requirements by the Food and Drug Administration in the United States and similar health authorities in foreign countries. The regulatory process, which includes extensive preclinical testing and clinical trials of each product in order to establish its safety and efficacy, is uncertain, can take many years and requires the expenditure of substantial resources.

Data obtained from preclinical and clinical activities is susceptible to varying interpretations that could delay, limit or prevent regulatory agency approvals or clearances. In addition, delays or rejections may be encountered as a result of changes in regulatory agency policy during the period of product development and/or the period of review of any application for regulatory agency approval or clearance for a product. Delays in obtaining regulatory agency approvals or clearances could:

- significantly harm the marketing of any products that we or our collaborators develop;

- impose costly procedures upon our activities or the activities of our collaborators;

- diminish any competitive advantages that we or our collaborative partners may attain; or

- adversely affect our ability to receive royalties and generate revenues and profits.

In addition, the marketing and manufacturing of drugs and biological products are subject to continuing FDA review, and later discovery of previously unknown problems with a product, its manufacture or its marketing may result in the FDA requiring further clinical research or restrictions on the product or the manufacturer, including withdrawal of the product from the market.

We depend on our collaborators to help us complete the process of developing and testing our products and our ability to develop and commercialize products may be impaired or delayed if our collaborative partnerships are unsuccessful.

Our strategy for the development, clinical testing and commercialization of our products requires entering into collaborations with corporate partners, licensors, licensees and others. We are dependent upon the subsequent success of these other parties in performing their respective responsibilities and the cooperation of our partners. Our collaborators may not cooperate with us or perform their obligations under our agreements with them. We cannot control the amount and timing of our collaborators' resources that will be devoted to our research activities related to our collaborative agreements with them. Our collaborators may choose to pursue existing or alternative technologies in preference to those being developed in collaboration with us.

Under agreements with collaborators, we may rely significantly on them, among other activities, to:

- fund research and development activities with us;

- pay us fees upon the achievement of milestones; and

- market with us any commercial products that result from our collaborations.

Our reliance on the research activities of our non-employee scientific advisors and other research institutions, whose activities are not wholly within our control, may lead to delays in technological developments.

We have relationships with scientific advisors at academic and other institutions, some of whom conduct research at our request. These scientific advisors are not our employees and may have commitments to, or consulting or advisory contracts with, other entities that may limit their availability to us. We have limited control over the activities of these advisors and, except as otherwise required by our collaboration and consulting agreements, can expect only limited amounts of their time to be dedicated to our activities. If our scientific advisors are unable or refuse to contribute to the development of any of our potential discoveries, our ability to generate significant advances in our technologies will be significantly harmed.

The loss of key personnel could slow our ability to conduct research and develop products.

Our future success depends to a significant extent on the skills, experience and efforts of our executive officers and key members of our scientific staff. We may be unable to retain our current personnel or attract or assimilate other highly qualified management and scientific personnel in the future. The loss of any or all of these individuals could harm our business and might significantly delay or prevent the achievement of research, development or business objectives.

We face intense competition from other companies.

Most or all of the products we could develop or commercialize will face competition from different therapeutic agents intended for treatment of the same indications or from other products incorporating drug delivery technologies. The competition potentially includes all of the pharmaceutical companies in the world. Many of these pharmaceutical companies have more financial resources, technical staff and manufacturing and marketing capabilities than we do. To the extent that we develop or market products incorporating drugs that are off-patent, or are being developed by multiple companies, we will face competition from other companies developing and marketing similar products.

Pharmaceutical companies are increasingly using advertising, including direct-to-consumer advertising, in marketing their products. The costs of such advertising are very high and are increasing. It may be difficult for our company to compete with larger companies investing greater resources in these marketing activities.

Other pharmaceutical companies are aggressively seeking to obtain new products by licensing products or technology from other companies. We will be competing to license or acquire products or technology with companies with far greater financial and other resources.

Inability to obtain special materials could slow down our research and development process.

Some of the critical materials and components used in our developed products are sourced from a single supplier. An interruption in supply of a key material could significantly delay our research and development process.

Special materials must often be manufactured for the first time for use in drug delivery systems, or materials may be used in the systems in a manner different from their customary commercial uses. The quality of materials can be critical to the performance of a drug delivery system, so a reliable source of a consistent supply of materials is important. Materials or components needed for our drug delivery systems may be difficult to obtain on commercially reasonable terms, particularly when relatively small quantities are required, or if the materials traditionally have not been used in pharmaceutical products.

Patents and other intellectual property protection may be difficult to obtain or ineffective.

Patent protection generally has been important in the pharmaceutical industry. Our existing patents may not cover future products, additional patents may not be issued, and current patents or patents issued in the future may not provide meaningful protection or prove to be of commercial benefit.

In the United States, patents are granted for specified periods of time. Some of our earlier patents have expired, or will expire, over the next several years.

Other companies may successfully challenge our patents in the future. Others may also challenge the validity or enforceability of our patents in litigation. If any challenge is successful, other companies may then be able to use the invention covered by the patent without payment. In addition, if other companies are able to obtain patents that cover any of our technologies or products, we may be subject to liability for damages and our activities could be blocked by legal action unless we can obtain licenses to those patents.

In addition, we utilize significant unpatented proprietary technology and rely on unpatented trade secrets and proprietary know-how to protect certain aspects of our products and technologies and the methods used to manufacture them. Other companies have or may develop similar technology which will compete with our technology.

Our royalty revenues could decline.

Our royalty revenues in future periods could vary significantly. Major factors which could have an effect on our royalty revenues include, but are not limited to:

- our partners' decisions about amounts and timing of advertising support for Retin-A Micro and Carac.

- our partners' decisions about other promotion and marketing support for Retin-A Micro and Carac.

- the timing of approvals for new product applications both in the United States and abroad.

- the expiration or invalidation of patents.

- decreases in licensees' sales of product due to competition, manufacturing difficulties or other factors that affect sales of product, including regulatory restrictions on the advertising of pharmaceutical products.

## USE OF PROCEEDS

We will retain broad discretion over the use of the net proceeds from the sale of our common stock offered hereby. Except as described in any prospectus supplement, we currently anticipate using the net proceeds from the sale of our common stock hereby primarily for clinical trials, research and development expenses and general and administrative expenses. The amounts and timing of the expenditures may vary significantly depending on numerous factors, such as the progress of our research and development efforts, participation from potential partnerships, technological advances and the competitive environment for our products. We may also use a portion of the net proceeds to acquire or invest in complementary businesses, products and technologies. Although we have no specific arrangements with respect to acquisitions, we evaluate acquisition opportunities and engage in related discussions with other companies from time to time.

Pending the use of the net proceeds, we intend to invest the net proceeds in short-term, interest-bearing, investment-grade securities.

## DESCRIPTION OF CAPITAL STOCK

As of the date of this registration statement, we have authorized 50,000,000 shares of $0.01 par value common stock and 2,500,000 shares of $0.01 par value preferred stock.

### Common Stock

As of May 3, 2004, there were 20,744,735 shares of common stock outstanding held of record by 453 stockholders. 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 nonassessable.

On August 19, 1996, the board of directors adopted a stockholders rights plan, which allows stockholders to purchase common stock at discount in the event of a tender offer or when any person acquires 20% or more of our outstanding common stock, subject to some exceptions.

We have not paid cash dividends on our common stock and do not plan to pay any such dividends in the foreseeable future. Under lending agreements we are party to, we are restricted from declaring or paying dividends on our common stock.

### Preferred Stock

The board of directors may provide for the issuance of up to 2,500,000 shares of preferred stock in one or more series and fix the rights, preferences, privileges and restrictions thereof,

including:

- dividend rights;

- conversion rights;

- voting rights;

- terms of redemption;

- liquidation preferences; and

- the number of shares constituting any series, or the designation of such series, without any further vote or action by the stockholders.

The issuance of preferred stock may have the effect of delaying, deferring or preventing a change in control of the company without action by the shareholders and could adversely affect the rights and powers, including voting rights, of the holders of common stock. In certain circumstances, the issuance of preferred stock could depress the market price of common stock. As of May 3, 2004, there were no shares of preferred stock outstanding.

## PLAN OF DISTRIBUTION

We may sell the common stock:

- to or through one or more underwriters or dealers;
- directly to purchasers, through agents; or
- through a combination of any of these methods of sale.

We may distribute the common stock:

- from time to time in one or more transactions at a fixed price or prices, which may be changed from time to time;
- at market prices prevailing at the times of sale;
- at prices related to such prevailing market prices; or at negotiated prices.

We will describe the method of distribution of the common stock in the applicable prospectus supplement.

We may determine the price or other terms of the common stock offered under this prospectus by use of an electronic auction. We will describe how any auction will determine the price or any other terms, how potential investors may participate in the auction and the nature of the obligations of the underwriter, dealer or agent in the applicable prospectus supplement.

Underwriters, dealers or agents may receive compensation in the form of discounts, concessions or commissions from us or our purchasers (as their agents in connection with the sale of the common stock). In addition, underwriters may sell common stock to or through dealers, and those dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters and/or commissions from the purchasers for whom they act as agent. These underwriters, dealers or agents may be considered to be underwriters under the Securities Act of 1933, as amended. As a result, discounts, commissions, or profits on resale received by the underwriters, dealers or agents may be treated as underwriting discounts and commissions. Each applicable prospectus supplement will identify any such underwriter, dealer or agent, and describe any compensation received by them from us. Any initial public offering price and any discounts or concessions allowed or reallowed or paid to dealers may be changed from time to time. The aggregate compensation received by all NASD members will not exceed 9.9% of the aggregate proceeds of this offering.

We may enter into agreements that provide for indemnification against certain civil liabilities, including liabilities under the Securities Act of 1933, as amended, or for contribution with respect to payments made by the underwriters, dealers or agents and to reimburse these persons for certain expenses.

We may grant underwriters who participate in the distribution of the common stock an option to purchase additional shares of common stock to cover over-allotments, if any, in

connection with the distribution. Underwriters or agents and their associates may be customers of, engage in transactions with, or perform services for us in the ordinary course of business.

In connection with the offering of the common stock, certain underwriters and selling group members and their respective affiliates, may engage in transactions that stabilize, maintain or otherwise affect the market price of the common stock. These transactions may include stabilization transactions effected in accordance with Rule 104 of Regulation M promulgated by the SEC pursuant to which these persons may bid for or purchase common stock for the purpose of stabilizing its market price.

The underwriters in an offering of the common stock may also create a "short position" for their account by selling more common stock in connection with the offering than they are committed to purchase from us. In that case, the underwriters could cover all or a portion of the short position by either purchasing common stock in the open market or by exercising any over-allotment option granted to them by us. In addition, any managing underwriter may impose "penalty bids" under contractual arrangements with other underwriters, which means that they can reclaim from an underwriter (or any selling group member participating in the offering) for the account of the other underwriters, the selling concession for the common stock that is distributed in the offering but subsequently purchased for the account of the underwriters in the open market. Any of the transactions described in this paragraph or comparable transactions that are described in any accompanying prospectus supplement may result in the maintenance of the price of the common stock at a level above that which might otherwise prevail in the open market. None of the transactions described in this paragraph or in an accompanying prospectus supplement are required to be taken by any underwriters and, if they are undertaken, may be discontinued at any time.

## LEGAL MATTERS

The validity of the shares offered hereby will be passed upon for us by Heller Ehrman White & McAuliffe, LLP, Palo Alto, California, counsel to the company. Julian N. Stern, the Secretary of the company, is the owner of 170,335 shares of common stock and is the sole stockholder and employee of a professional corporation that is a partner of Heller Ehrman White & McAuliffe LLP.

## EXPERTS

The consolidated financial statements of A.P. Pharma, Inc. appearing in A.P. Pharma's Annual Report (Form 10-K) for the year ended December 31, 2003, have been audited by Ernst & Young LLP, independent auditors, as set forth in their report thereon included therein and incorporated herein by reference. Such consolidated financial statements are incorporated herein by reference in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

## WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly, and current reports, proxy statements, and other documents with the Securities and Exchange Commission (the "SEC"). You may read and copy any document we file at the SEC's public reference room at Judiciary Plaza Building, 450 Fifth Street, N.W., Room 1024, Washington, D.C. 20549. You should call 1-800-SEC-0330 for more information on the public reference room. The SEC maintains an internet site at http://www.sec.gov where certain information regarding issuers (including A.P. Pharma) may be found.

This prospectus is part of a registration statement that we filed with the SEC (Registration No. 333-115163). The registration statement contains more information than this prospectus regarding A.P. Pharma and its common stock, including certain exhibits and schedules. You can get a copy of the registration statement from the SEC at the address listed above or from its internet site.

## DOCUMENTS INCORPORATED BY REFERENCE

The SEC allows us to "incorporate" into this prospectus information we file with the SEC in other documents. This means that we can disclose important information to you by referring to other documents that contain that information. The information may include documents filed after the date of this prospectus which update and supersede the information you read in this prospectus. We incorporate by reference the documents listed below, except to the extent information in those documents is different from the information contained in this prospectus, and all future documents filed with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934 until we terminate the offering of these shares.

| SEC Filing (File No.) | Period/Filing Date |
|---|---|
| Annual Report on Form 10-K | Year ended December 31, 2003 |
| Quarterly Report on Form 10-Q | Quarter ended March 31, 2004 |
| Registration Statement on Form 8-A describing the common stock | Filed on August 7, 1987 |

You may request a copy of these documents, at no cost, by writing to:

A.P. Pharma, Inc.
123 Saginaw Drive
Redwood City, California 94063
Attention: Investor Relations
Telephone: (650) 366-2626

PROSPECTUS SUPPLEMENT
(To Prospectus dated June 24, 2004)

A.P. PHARMA, INC.

4,183,335 Shares
Common Stock

(Footnote continued)