

ACADIA PHARMACEUTICALS INC
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Filed Pursuant to Rule 424(b)(5)
Registration No. 333-131079

Prospectus Supplement

(To Prospectus dated February 10, 2006)

4,947,229 Shares

Common Stock

We are offering 4,947,229 shares of our common stock. Our common stock is listed on The Nasdaq National Market under the symbol ACAD . On April 27, 2006, the last reported sale price for our common stock was \$12.72.

Investing in our common stock involves a high degree of risk. See Risk Factors beginning on page S-6 of this prospectus supplement.

| | Per Share | Total |
|---|------------------|---------------|
| Offering price | \$ 12.00 | \$ 59,366,748 |
| Discounts and commissions to underwriters | \$ 0.72 | \$ 3,562,005 |
| Offering proceeds to ACADIA Pharmaceuticals Inc., before expenses | \$ 11.28 | \$ 55,804,743 |

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

We have granted the underwriters the right to purchase up to 742,084 additional shares of common stock in the event that the underwriters sell more than 4,947,229 shares in the offering. The underwriters can exercise this right at any time within 30 days after the offering. The underwriters expect to deliver the shares of common stock to investors on or about May 3, 2006.

Banc of America Securities LLC

Lehman Brothers

Piper Jaffray

JMP Securities

Canaccord Adams

April 27, 2006

TABLE OF CONTENTS

Prospectus Supplement

| | |
|--|------|
| <u>Summary</u> | S-1 |
| <u>Risk Factors</u> | S-6 |
| <u>Forward-Looking Statements</u> | S-6 |
| <u>Use of Proceeds</u> | S-7 |
| <u>Capitalization</u> | S-8 |
| <u>Dilution</u> | S-9 |
| <u>Price Range of Common Stock and Dividend Policy</u> | S-10 |
| <u>Underwriting</u> | S-11 |
| <u>Legal Matters</u> | S-13 |
| <u>Experts</u> | S-13 |
| <u>Where You Can Find Additional Information</u> | S-14 |

Prospectus

| | |
|--|---|
| <u>Risk Factors</u> | 1 |
| <u>Recent Event</u> | 1 |
| <u>Note Regarding Forward-Looking Statements</u> | 1 |
| <u>Use of Proceeds</u> | 2 |
| <u>Selling Stockholder</u> | 2 |
| <u>Plan of Distribution</u> | 3 |
| <u>Legal Matters</u> | 5 |
| <u>Experts</u> | 5 |
| <u>Where You Can Find More Information</u> | 6 |

This document is in two parts. The first part is this prospectus supplement, which describes the terms of this offering of common stock and also adds to, updates and changes information contained in the accompanying prospectus and the documents incorporated by reference. The second part is the accompanying prospectus, which gives more general information. To the extent the information contained in this prospectus supplement differs from or conflicts with the information contained in the accompanying prospectus or any document incorporated by reference, the information in this prospectus supplement will control.

You should rely only on the information contained or incorporated by reference in this prospectus supplement and the accompanying prospectus. We have not authorized, and the underwriters have not authorized, anyone to provide you with different information. No one is making offers to sell or seeking offers to buy these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information contained in this prospectus supplement is accurate as of the date on the front cover of this prospectus supplement only and that any information we have incorporated by reference or included in the accompanying prospectus is accurate only as of the date given in the document incorporated by reference or on the prospectus, as applicable, regardless of the time of delivery of this prospectus supplement, the accompanying prospectus or any sale of our common stock. Our business, financial condition, results of operations and prospects may have changed since that date.

References in this prospectus to ACADIA, the Company, we, us and our refer to ACADIA Pharmaceuticals Inc., together with our wholly-owned subsidiaries, ACADIA Pharmaceuticals AB and ACADIA Pharmaceuticals A/S.

ACADIA and R-SAT are our trademarks. This prospectus supplement, the accompanying prospectus and the documents incorporated by reference also include trademarks and trade names owned by other parties, and these trademarks and trade names are the property of their respective owners. Use or display by us of other parties' trademarks, trade dress or products in this prospectus supplement, the accompanying prospectus or the documents incorporated by reference is not intended to, and does not imply a relationship with, or endorsements or sponsorship of, us by the trademark or trade dress owners.

Information contained on our website does not constitute part of this prospectus supplement or the accompanying prospectus.

SUMMARY

This summary does not contain all the information that you should consider before investing in our common stock. You should carefully read the entire prospectus supplement and the accompanying prospectus, including the Risk Factors sections, as well as the financial statements and the other information incorporated by reference herein before making an investment decision.

Overview

We are a biopharmaceutical company focused on the discovery, development, and commercialization of small molecule drugs for the treatment of central nervous system disorders. We currently have five programs in clinical development and several additional programs in preclinical development and discovery stages. Our four proprietary Phase II-stage clinical programs are ACP-103 for treatment-induced dysfunctions in Parkinson's disease, ACP-103 as an adjunctive therapy for schizophrenia, ACP-103 for sleep maintenance insomnia, and ACP-104 for the treatment of schizophrenia. We have retained worldwide commercialization rights for these programs. We also have a neuropathic pain program in Phase II clinical trials in collaboration with Allergan, Inc. All of the drug candidates in our product pipeline emanate from discoveries made using our proprietary drug discovery platform.

Our programs address diseases that are not well served by currently available therapies and represent large potential commercial opportunities. We believe that our drug candidates offer innovative therapeutic approaches and may provide significant advantages relative to current therapies. The following table summarizes our product pipeline:

| Compound/Program | Indication | Stage of Development | Commercialization Rights |
|-------------------------|---|-----------------------------|---------------------------------|
| ACP-103 | Treatment-induced dysfunctions in Parkinson's disease | Phase II | ACADIA |
| ACP-103 | Adjunctive therapy for schizophrenia | Phase II | ACADIA |
| ACP-103 | Sleep maintenance insomnia | Phase II* | ACADIA |
| ACP-104 | Schizophrenia | Phase II | ACADIA |
| AGN-XX and AGN-YY | Neuropathic pain | Phase II | Allergan |
| AC-262271 | Glaucoma | IND-track development | Allergan |
| ACP-105 | Endocrinology | IND-track development | ACADIA |
| Serotonin program | Neuropsychiatry and sleep | Preclinical | ACADIA |
| Muscarinic program | Neuropsychiatry and other | Preclinical | Sepracor |
| Cannabinoid CB1 program | Obesity and substance abuse | Preclinical | ACADIA |

* Proof-of-concept clinical trial successfully completed in healthy older volunteers.

ACP-103 for treatment-induced dysfunctions in Parkinson's disease. We are developing ACP-103 to treat the debilitating psychiatric and motoric dysfunctions that frequently result from currently prescribed Parkinson's disease therapies. Currently, there are no therapies approved to treat these treatment-induced dysfunctions in the United States. We have completed a multi-center Phase II clinical trial in which ACP-103 demonstrated antipsychotic effects, was safe and well tolerated, and did not worsen disease-related motoric function in patients

with Parkinson's disease suffering from treatment-induced psychosis. Many of the eligible patients from this trial have enrolled in an open-label extension study, including some patients who have been treated with ACP-103 for over one year. Subject to discussions with the Food and Drug Administration, or FDA, we plan to initiate a clinical trial to further evaluate the efficacy of ACP-103 in patients with Parkinson's disease suffering from treatment-induced psychosis. We intend to design this study to be sufficiently powered and to have the appropriate clinical endpoints, so that it may serve as one of the required pivotal trials for this development program. We also currently are conducting a study to evaluate the ability of ACP-103 to treat drug-induced dyskinesias, a motoric dysfunction, in patients with Parkinson's disease.

ACP-103 as an adjunctive therapy for schizophrenia. Current drugs used to treat schizophrenia have substantial limitations, including severe side effects and lack of effect on most of the negative symptoms of the disease. We believe that the use of ACP-103 adjunctively may result in an improved antipsychotic therapy with better efficacy and fewer side effects relative to existing therapies. We have completed two clinical trials in this Phase II program that showed that ACP-103 reduced motor disturbances associated with treatment with haloperidol, an existing antipsychotic drug. We are currently conducting a large multi-center Phase II clinical trial designed to evaluate the ability of ACP-103, when used adjunctively with other antipsychotic drugs, to provide an improved therapy for patients with schizophrenia. We plan to enroll up to 400 patients with schizophrenia in this trial and to conduct an interim analysis after 200 patients have completed the trial. We expect to report results from this interim analysis during the second half of 2006.

ACP-103 for sleep maintenance insomnia. In contrast to currently available insomnia drugs that are sedatives and have the potential to impair daytime functioning, ACP-103 provides the opportunity to treat the symptoms of sleep maintenance insomnia without inducing sleep or impairing daytime functioning. We have completed a proof-of-concept clinical study which demonstrated that ACP-103 induced a statistically significant and dose-related increase in deep, or slow wave, sleep in healthy older volunteers. Subject to discussions with the FDA, we next plan to initiate a clinical trial to evaluate the efficacy of ACP-103 in patients with sleep maintenance insomnia. We intend to design this study to be sufficiently powered and to have the appropriate clinical endpoints, so that it may serve as one of the required pivotal trials for this development program.

ACP-104 for schizophrenia. We are developing ACP-104 as a novel, stand-alone treatment for patients with schizophrenia. Currently prescribed treatments do not effectively address or may exacerbate cognitive disturbances associated with schizophrenia. We believe that ACP-104 may provide an effective antipsychotic therapy that may have the added advantage of improving cognitive function in patients with schizophrenia. We are currently conducting the initial studies in our Phase II clinical program for ACP-104 in patients with schizophrenia and we expect to report results from these studies by mid-2006. Following completion of these initial studies, we plan to initiate a Phase IIb clinical trial to further assess the efficacy of ACP-104 in the treatment of patients with schizophrenia.

Neuropathic pain. We have discovered a new class of compounds in collaboration with Allergan that we believe may represent a significant breakthrough in the treatment of neuropathic pain. Allergan has completed Phase I clinical trials with two drug candidates and is currently conducting Phase II clinical trials in this program.

We have built a proprietary drug discovery platform that we use to rapidly discover new compounds that may serve as potential treatments for significant unmet medical needs. Our platform encompasses proprietary target-based and chemistry-based technologies that we integrate with our discovery and development capabilities. We believe that the breadth of our discovery and development programs and the rapid pace at which we have discovered drug candidates provide strong validation of our proprietary platform and a basis for expanding our pipeline.

We leverage our proprietary drug discovery platform and expertise through collaborations with pharmaceutical and biotechnology companies. We have three collaborations with Allergan and one with Sepracor

Inc. for the discovery and development of small molecule drug candidates. We have received research funding, upfront and milestone payments from our collaborators, and equity investments from Allergan and Sepracor. We may receive additional payments, including research support, milestone payments, and royalties on product sales.

We have assembled a management team with significant industry experience to lead the discovery, development, and commercialization of our drug candidates. Members of our management team have contributed to the discovery, development, and approval of multiple drug candidates to treat central nervous system disorders and are also experts in the application of gene, target, and chemical technologies in drug discovery. We complement our management team with a network of scientific and clinical advisors that includes recognized experts in the fields of schizophrenia, Parkinson's disease and other central nervous system disorders.

Recent Clinical Developments

ACP-103 for Treatment-Induced Psychosis in Patients With Parkinson's Disease

In March 2006, we announced positive results from a multi-center, double-blind, placebo-controlled Phase II trial of ACP-103 in patients with Parkinson's disease suffering from treatment-induced psychosis. The trial met the primary endpoint, which was to demonstrate that administration of ACP-103 did not worsen the motoric function of these patients. In addition, administration of ACP-103 produced antipsychotic effects, a secondary endpoint of this trial, and was safe and well tolerated. We are also conducting an ongoing open-label extension study involving the extended use of ACP-103 in patients with Parkinson's disease who have completed the aforementioned Phase II trial and may, in the opinion of the treating physician, benefit from continued treatment with ACP-103. The extension study is designed to determine the safety of ACP-103 during long-term administration. Many of the eligible patients are participating in this extension study, including ten patients who have been treated with ACP-103 for over six months and three of these patients who have been treated with ACP-103 for over one year.

ACP-103 for Treatment of Sleep Maintenance Insomnia

In April 2006, we announced positive results from a proof-of-concept clinical study to assess the effect of ACP-103 on slow wave sleep in healthy adult volunteers ranging in age from 40 to 64. The results demonstrated that ACP-103 induced a statistically significant increase in slow wave sleep that was dose-related. In addition, administration of ACP-103 had a positive impact on measures for sleep maintenance, including decreases in the number of awakenings after sleep onset and in the time awake after sleep onset. ACP-103 also did not alter latency to sleep onset and did not impair daytime functioning. ACP-103 was safe and well tolerated in the study subjects and there were no serious adverse events reported.

Risk Factors

Investment in our common stock involves risk. These risks include, but are not limited to, risks related to the progress, timing and success of our clinical trials, research and development programs, and collaborations. For a discussion of these and other risk factors that should be considered before making an investment in our common stock, see "Risk Factors" in our Annual Report on Form 10-K for the year ended December 31, 2005, and in any subsequent periodic or current reports filed with the Securities and Exchange Commission (SEC).

Corporate Information

We were originally incorporated in Vermont in 1993 as Receptor Technologies, Inc. In 1997, we reincorporated in Delaware. Our executive offices are located at 3911 Sorrento Valley Boulevard, San Diego, California 92121, and our telephone number is (858) 558-2871. Our website address is www.acadia-pharm.com. Information contained on our website is not a part of this prospectus supplement, the accompanying prospectus or any of the documents incorporated by reference herein.

The Offering

| | |
|---|---|
| Common stock offered by us | 4,947,229 shares |
| Common stock to be outstanding after this offering | 29,337,932 shares |
| Use of proceeds | We intend to use the net proceeds of this offering to fund ongoing and new clinical trials for ACP-103 and ACP-104 and our other product candidates, support research and preclinical development activities for our potential product candidates, and for general corporate purposes, including working capital. |
| Dividend policy | We currently intend to retain any future earnings to fund the development and growth of our business and do not anticipate paying cash dividends in the foreseeable future. |
| Nasdaq National Market Symbol | ACAD |
| The number of shares of our common stock to be outstanding after this offering is based upon the number of our shares outstanding as of April 1, 2006 and excludes: | |

up to 2,596,074 shares that may be issued upon the exercise of outstanding options granted pursuant to our stock option plans at a weighted average exercise price of \$5.80 per share; and

up to 1,393,475 shares that may be issued upon exercise of outstanding warrants at a weighted average exercise price of \$8.15 per share.

Except as otherwise indicated, information in this prospectus supplement assumes no exercise by the underwriters of their option to purchase up to 742,084 additional shares of common stock.

Summary Consolidated Financial Data

The following data has been derived from our audited financial statements, including the consolidated balance sheet at December 31, 2005 and 2004 and the related consolidated statements of operations for the three years ended December 31, 2005 and related notes appearing in our Annual Report on Form 10-K, which we filed with the SEC and is incorporated herein by reference. You should read the selected financial data set forth below in conjunction with Management's Discussion and Analysis of Financial Condition and Results of Operations and our financial statements and related notes included in our 2005 Form 10-K.

| | Years Ended December 31, | | |
|---|--------------------------|--------------------|--------------------|
| | 2005 | 2004 | 2003 |
| Consolidated Statement of Operations Data: | | | |
| Revenues: | | | |
| Collaborative revenues | \$ 10,956 | \$ 4,604 | \$ 7,378 |
| Operating expenses: | | | |
| Research and development | 30,848 | 23,454 | 16,935 |
| General and administrative | 8,386 | 4,889 | 2,791 |
| Provision for loss from litigation | 6,221 | | |
| Stock-based compensation | 1,307 | 2,356 | 1,392 |
| Total operating expenses | 46,762 | 30,699 | 21,118 |
| Loss from operations | (35,806) | (26,095) | (13,740) |
| Interest income | 1,851 | 607 | 360 |
| Interest expense | (180) | (429) | (712) |
| Net loss | \$ (34,135) | \$ (25,917) | \$ (14,092) |
| Net loss available to common stockholders | \$ (34,135) | \$ (17,331) | \$ (1,813) |
| Net loss per common share, basic and diluted | \$ (1.55) | \$ (1.67) | \$ (1.24) |
| Weighted average shares used in computing net loss per common share, basic and diluted(1) | 22,014 | 10,354 | 1,459 |
| Net loss available to participating preferred stockholders | \$ | \$ (8,586) | \$ (12,279) |
| Net loss per participating preferred share, basic and diluted | \$ | \$ (0.87) | \$ (1.46) |
| Weighted average participating preferred shares outstanding, basic and diluted(1) | | 9,901 | 8,412 |

- (1) Please see Note 2 of the notes to our consolidated financial statements appearing in our 2005 Form 10-K for an explanation of the determination of the number of shares used in computing per share data. All amounts reflect a 1-for-2 reverse stock split effected by us on May 25, 2004.

| | At December 31, | |
|---|-----------------|-----------|
| | 2005 | 2004 |
| Consolidated Balance Sheet Data: | | |
| Cash, cash equivalents, investment securities and restricted cash | \$ 55,521 | \$ 35,927 |
| Working capital | 38,423 | 29,178 |
| Total assets | 62,506 | 40,365 |
| Long-term debt, less current portion | 892 | 1,044 |
| Total stockholders' equity | 39,371 | 30,680 |

RISK FACTORS

Investment in our common stock involves risks. Before deciding whether to invest in our common stock, you should consider carefully the risk factors discussed in the section entitled "Risk Factors" contained in our Annual Report on Form 10-K for the year ended December 31, 2005, as filed with the SEC on March 15, 2006, which is incorporated herein by reference in its entirety, as well as any amendment or updates to our risk factors reflected in subsequent filings with the SEC. If any of these risks actually occurs, our business, financial condition, results of operations or cash flow could be seriously harmed. This could cause the trading price of our common stock to decline, resulting in a loss of all or part of your investment.

FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus, and the documents incorporated by reference herein and therein contain 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"). These statements relate to future events or to our future financial performance and involve known and unknown risks, uncertainties and other factors which may cause our actual results, performance or achievements to be materially different from any future results, performances or achievements expressed or implied by the forward-looking statements. Forward-looking statements include, but are not limited to statements about:

the progress of clinical trials involving our drug candidates;

the progress of our research and development programs;

the benefits to be derived from relationships with our collaborators;

our estimates of future revenues and profitability; and

our estimates regarding our capital requirements and our need for additional financing.

In some cases, you can identify forward-looking statements by terms such as "may," "will," "should," "could," "would," "expects," "plans," "anticipates," "believes," "estimates," "projects," "predicts," "potential" and similar expressions intended to identify forward-looking statements. These statements represent our current views with respect to future events and are based on assumptions and subject to risks and uncertainties. Given these uncertainties, you should not place undue reliance on these forward-looking statements. Also, these forward-looking statements represent our estimates and assumptions only as of the date of the document containing the applicable statement. Unless required by law, we undertake no obligation to update or revise any forward-looking statements to reflect new information or future events or developments. Thus, you should not assume that our silence over time means that actual events are bearing out as expressed or implied in such forward-looking statements.

USE OF PROCEEDS

We estimate the net proceeds to us from this offering will be approximately \$55.6 million, based upon the public offering price of \$12.00 per share (\$64.0 million if the underwriters' option to purchase additional shares is exercised in full), after payment of underwriting discounts and commissions and estimated expenses of this offering.

We intend to use the net proceeds of this offering to fund ongoing and new clinical trials for ACP-103 and ACP-104 and our other product candidates, support research and preclinical development activities for our potential product candidates, and for general corporate purposes, including working capital. The timing and amount of our actual expenditures will depend significantly on many factors including, but not limited to, the progress in, and costs of, our clinical trials and research and development activities, and the amount and timing of revenues from our current or future collaborations.

Pending such uses, we may invest the net proceeds in short-term, investment-grade, interest-bearing securities or guaranteed obligations of the United States government or other securities. Our management will have significant flexibility in applying the net proceeds of this offering and could use these proceeds for corporate purposes that do not increase our profitability or our market value, or in ways with which our stockholders may not agree. Investors will be relying on the judgment of our management regarding the application of the proceeds of this offering. We may use the net proceeds for corporate purposes that do not yield a significant return or any return at all for our stockholders, which may cause our stock price to decline.

S-7

CAPITALIZATION

The following table shows:

our capitalization on December 31, 2005; and

our capitalization on December 31, 2005, assuming the completion of this offering at a public offering price of \$12.00 per share, less the underwriting discount and estimated offering expenses payable by us.

| | December 31, 2005 | |
|--|-------------------|----------------------------|
| | Actual | As Adjusted (unaudited) |
| | (in thousands) | |
| Cash, cash equivalents, investments securities and restricted cash | \$ 55,521 | \$ 111,126 |
| Long-term debt, less current portion | \$ 892 | 892 |
| Stockholders' equity: | | |
| Preferred stock, \$0.0001 par value: 5,000,000 shares authorized, no shares issued and outstanding, actual, no shares issued and outstanding, as adjusted | \$ | \$ |
| Common stock, \$0.0001 par value: 75,000,000 shares authorized, 23,517,876 shares outstanding, actual, 28,465,105 shares issued and outstanding, as adjusted | 2 | 3 |
| Additional paid-in capital | 168,426 | 224,030 |
| Accumulated deficit | (128,418) | (128,418) |
| Unearned stock-based compensation | (773) | (773) |
| Accumulated other comprehensive income | 134 | 134 |
| Total stockholders' equity | 39,371 | 94,976 |
| Total capitalization | \$ 40,263 | \$ 95,868 |

The number of shares of common stock as reflected in the actual and as adjusted columns above is based on the actual number of shares outstanding as of December 31, 2005, and does not include, as of that date:

813,393 shares of common stock issued to Sepracor Inc. in January 2006;

1,319,402 shares of common stock issuable upon the exercise of outstanding warrants at an exercise price of \$8.148 per share;

74,073 shares of common stock issuable upon the exercise of outstanding warrants at an exercise price of \$8.10 per share;

2,238,647 shares of common stock issuable upon exercise of outstanding options at a weighted average exercise price of \$4.34 per share;

656,361 shares of common stock available for future issuance under our equity compensation plans; and

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211,966 shares of common stock available for future issuance under our 2004 Employee Stock Purchase Plan.

S-8

DILUTION

Our net tangible book value at December 31, 2005 was approximately \$39.4 million, or \$1.67 per share of common stock. Net tangible book value per share is determined by dividing the net tangible book value, total tangible assets less total liabilities, by the number of outstanding shares of common stock at that date. After taking into account the sale of 4,947,229 shares of our common stock in this offering at the public offering price of \$12.00 per share and, after deducting underwriting discounts and commissions and our estimated offering expenses, the pro forma net tangible book value at December 31, 2005 would have been approximately \$95.0 million, or \$3.34 per share. Assuming the completion of this offering, there will be an immediate increase in net tangible book value to existing stockholders of \$1.67 per share and an immediate dilution to new investors of \$8.66 per share. The following table illustrates the per share dilution to new investors:

| | |
|---|----------|
| Offering price per share | \$ 12.00 |
| Net tangible book value per share as of December 31, 2005 | 1.67 |
| Pro forma increase in net tangible book value per share attributable to new investors | 1.67 |
| | |
| Pro forma net tangible book value per share, after offering | 3.34 |
| | |
| Dilution per share to new investors | \$ 8.66 |

If the underwriters exercise their option to purchase 742,084 additional shares in full, there will be an increase in pro forma net tangible book value to existing stockholders of \$1.87 per share and an immediate dilution in pro forma net tangible book value to new investors of \$8.46 per share.

PRICE RANGE OF COMMON STOCK AND DIVIDEND POLICY

Our common stock trades on The Nasdaq National Market under the symbol ACAD. The following table sets forth the range of high and low sales prices as reported by The Nasdaq National Market for the periods indicated since the initial public offering of our common stock on May 27, 2004.

| | Price Range of Common Stock | |
|--|--------------------------------|---------|
| | High | Low |
| Fiscal year ended December 31, 2004: | | |
| Second Quarter (from May 27, 2004) | \$ 7.50 | \$ 5.79 |
| Third Quarter | 8.00 | 4.95 |
| Fourth Quarter | 7.90 | 5.70 |
| Fiscal year ending December 31, 2005: | | |
| First Quarter | \$ 8.40 | \$ 6.16 |
| Second Quarter | 9.51 | 6.25 |
| Third Quarter | 11.69 | 7.85 |
| Fourth Quarter | 11.85 | 8.73 |
| Fiscal year ending December 31, 2006: | | |
| First Quarter | \$ 17.94 | \$ 9.60 |
| Second Quarter (through April 27, 2006) | 16.23 | 12.40 |

On April 27, 2006, the last sales price of the common stock reported on the Nasdaq National Market was \$12.72.

On April 21, 2006, the approximate number of holders of record of our common stock was 87.

We have never declared or paid cash dividends on our capital stock. We currently intend to retain any future earnings to fund the development and growth of our business and do not anticipate paying any cash dividends in the foreseeable future. Future dividends, if any, will be determined by our board of directors and will depend upon our financial condition, results of operations, capital requirements and other factors.

UNDERWRITING

We are offering the shares of common stock described in this prospectus supplement through a number of underwriters. Banc of America Securities LLC and Lehman Brothers Inc. are the representatives, and book-running managers, of the several underwriters with whom we have entered into a firm commitment underwriting agreement. Subject to the terms and conditions of the underwriting agreement, we have agreed to sell to the underwriters, and each underwriter severally has agreed to purchase, the number of shares of common stock listed next to its name in the following table:

| Underwriter | Number of Shares |
|--------------------------------|------------------|
| Banc of America Securities LLC | 1,682,058 |
| Lehman Brothers Inc. | 1,682,058 |
| Piper Jaffray & Co. | 742,084 |
| JMP Securities LLC | 692,612 |
| Canaccord Adams Inc. | 148,417 |
| Total | 4,947,229 |

The underwriting agreement is subject to a number of terms and conditions and provides that the underwriters must buy all of the shares if they buy any of them (other than those shares covered by their option to purchase up to 742,084 additional shares). The underwriters will sell the shares to the public when and if the underwriters buy the shares from us.

The underwriters initially will offer the shares to the public at the price specified on the cover page of this prospectus supplement. The underwriters may allow a concession of not more than \$0.43 per share to selected dealers. If all the shares are not sold at the public offering price, the underwriters may change the public offering price and the other selling terms. The offering of the shares of common stock is subject to a number of conditions, including:

receipt and acceptance of the common stock by the underwriters; and

the underwriters' right to reject orders in whole or in part.

Option to Purchase Additional Shares. We have granted the underwriters an option to purchase up to 742,084 additional shares of our common stock at the same price per share as they are paying for the shares shown on the cover page of this prospectus supplement. These additional shares would cover sales by the underwriters which exceed the total number of shares shown in the table above. The underwriters may exercise this option at any time and from time to time, in whole or in part, within 30 days after the date of this prospectus supplement. To the extent that the underwriters exercise this option, each underwriter will purchase additional shares from us in approximately the same proportion as it purchased the shares shown in the table above. We will pay the expenses associated with the exercise of this option.

Discount and Commissions. The following table shows the per share and total underwriting discounts and commissions to be paid to the underwriters by us. These amounts are shown assuming no exercise and full exercise of the underwriters' option to purchase additional shares.

| Per Share | Paid by Us | |
|-----------|------------------|------------------|
| | No Exercise | Full Exercise |
| | \$ 0.72 | \$ 0.72 |
| Total | \$ 3,562,005 | \$ 4,096,305 |

In compliance with NASD guidelines, the maximum compensation to the underwriters in connection with the sale of common stock pursuant to this prospectus supplement and the accompanying prospectus will not exceed 8% of the aggregate total offering price to the public of the common stock as set forth on the cover page of this prospectus supplement.

Listing. We estimate that the expenses of the offering to be paid by us, not including underwriting discounts and commissions, will be approximately \$200,000.

Quotation. Our common stock is quoted on The Nasdaq National Market under the symbol ACAD .

Stabilization. In connection with the offering, the underwriters may engage in activities that stabilize, maintain or otherwise affect the price of our common stock, including:

stabilizing transaction;

short sales;

syndicate covering transactions; and

purchases to cover positions created by short sales.

Stabilizing transactions consist of bids or purchases made for the purpose of preventing or retarding a decline in the market price of our common stock while this offering is in progress. Stabilizing transactions may include making short sales of our common stock, which involves the sale by the underwriters of a greater number of shares of common stock than they are required to purchase in this offering, and purchasing shares of common stock from us or on the open market to cover positions created by short sales. Short sales may be covered shorts, which are short positions in an amount not greater than the underwriters' option to purchase additional shares referred to above, or may be naked shorts, which are short positions in excess of that amount. Syndicate covering transactions involve purchases of our common stock in the open market after the distribution has been completed in order to cover syndicate short positions.

The underwriters may close out any covered short position either by exercising their option to purchase additional shares, in whole or in part, or by purchasing shares in the open market. In making the determination, the underwriters will consider, among other things, the price of shares available for purchase in the open market compared to the price at which the underwriters may purchase shares through their option to purchase additional shares.

A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the common stock in the open market that could adversely affect investors who purchased in this offering. To the extent that the underwriters create a naked short position, they will purchase shares in the open market to cover the position.

These activities may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of our common stock. As a result of these activities, the price of our common stock may be higher than the price that otherwise might exist in the open market. If the underwriters commence the activities, they may discontinue them at any time. The underwriters may carry out these transactions on the Nasdaq National Market, in the over-the-counter market or otherwise.

Market Making. In connection with the offering, some underwriters and any selling group members who are qualified market makers on The Nasdaq National Market may engage in passive market making transactions in our common stock on The Nasdaq National Market. Passive market making is allowed during the period when the SEC's rules would otherwise prohibit market activity by the underwriters and dealers who are participating in this offering. Passive market making may occur during the business day before the pricing of this offering, before the pricing of this offering, before the commencement of offers or sales of the common stock. A passive market

maker must comply with applicable volume and price limitations and must be identified as a passive market maker. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for our common stock; but if all independent bids are lowered below the passive market maker's bid, the passive market maker must also lower its bid once it exceeds specified purchase limits. Net purchases by a passive market maker on each day are limited to a specified percentage of the passive market maker's average daily trading volume in our common stock during the specified period and must be discontinued when that limit is reached. Passive market making may cause the price of our common stock to be higher than the price that otherwise would exist in the open market in the absence of those transactions. The underwriters and dealers are not required to engage in a passive market making and may end passive market making activities at any time.

Lock-up Agreements. We have agreed not to offer, sell, contract to sell or otherwise issue any shares of common stock or securities exchangeable or convertible into common stock, without the prior written consent of Banc of America Securities LLC and Lehman Brothers Inc. for a period of 90 days, subject to an 18-day extension, following the date of this prospectus supplement, subject to certain exceptions. In addition, our directors and executive officers have entered into lock-up agreements with the underwriters. Under those lock-up agreements, subject to exceptions, those holders of such stock may not, directly or indirectly, offer, sell, contract to sell, pledge or otherwise dispose of or hedge any common stock or securities convertible into or exchangeable for shares of common stock, or publicly announce to do any of the foregoing, without the prior written consent of Banc of America Securities LLC and Lehman Brothers Inc. for a period of 90 days from the date of this prospectus supplement, subject to an 18-day extension. This consent may be given at any time without public notice. These agreements, however, do not apply to the grant or exercise of options or other issuance of common stock under any existing stock option or other employee benefit plans.

Indemnification. We will indemnify the underwriters against certain liabilities, including liabilities under the Securities Act. If we are unable to provide this indemnification, we will contribute to payments the underwriters may be required to make in respect of those liabilities.

Conflicts/Affiliates. The underwriters and their affiliates have provided, and may in the future provide, various investment banking, commercial banking and other financial services for us for which services they have received, and may receive in the future, customary fees.

LEGAL MATTERS

Cooley Godward LLP, San Diego, California, will pass upon the validity of the issuance of the shares being sold in this offering. Certain matters will be passed upon for the underwriters by Shearman & Sterling LLP, New York, New York.

EXPERTS

The financial statements and management's assessment of the effectiveness of internal control over financial reporting (which is included in Management's Report on Internal Control Over Financial Reporting) incorporated in this prospectus supplement by reference to the Annual Report on Form 10-K for the year ended December 31, 2005 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We are a reporting company and we file annual, quarterly and current reports, proxy statements and other information with the SEC. We have filed with the SEC a registration statement under the Securities Act with respect to the common stock offered hereby. This prospectus, which constitutes a part of the registration statement, does not contain all of the information set forth in the registration statement or the exhibits which are part of the registration statement. For further information with respect to us and the common stock offered by this prospectus supplement, we refer you to the registration statement and the exhibits filed as part of the registration statement. You may read and copy any document we file with the SEC 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. Our SEC filings are also available to the public from the SEC's website at www.sec.gov. We maintain a website at www.acadia-pharm.com.

The SEC allows us to incorporate by reference the information we file with it, which means that we can disclose important information to you by referring to those documents. The information incorporated by reference is an important part of this prospectus supplement, and information that we file later with the SEC will automatically update and supersede this information. We incorporate by reference the following documents we filed with the SEC pursuant to Section 13 of the Exchange Act:

Annual Report on Form 10-K for the fiscal year ended December 31, 2005 (including information specifically incorporated by reference into our Form 10-K from our Proxy Statement for our 2006 Annual Meeting of Stockholders);

Current Reports on Form 8-K filed on January 18, March 6, March 23, and April 19, 2006;

Description of our common stock contained in our registration statement on Form 8-A dated May 19, 2004; and

All documents filed by us with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus and before the last offering of the securities under this prospectus.

You may access our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, Proxy Statement, and amendments to those documents filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act with the SEC free of charge at the SEC's website or our website as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC. The reference to our website does not constitute incorporation by reference of the information contained in our website. We do not consider information contained on, or that can be accessed through, our website to be part of this prospectus or the related registration statement.

You may request a copy of our SEC filings at no cost, by telephoning or writing us at the following address:

Investor Relations

ACADIA Pharmaceuticals Inc.

3911 Sorrento Valley Boulevard

San Diego, CA 92121

(858) 558-2871

Common Stock

This is a public offering of shares of our common stock, \$0.0001 par value per share. We may from time to time sell up to \$75,000,000 aggregate initial offering price of our common stock. In addition, the selling stockholder named under the caption **Selling Stockholder** may from time to time sell up to 1,890,422 shares of our common stock. We will receive no proceeds from the sale of shares sold by the selling stockholder under this prospectus. You should read this prospectus and any supplement carefully before you invest.

Our common stock is listed on The Nasdaq National Market under the symbol **ACAD**. On January 13, 2006, the last reported sale price for our common stock was \$10.71. You are encouraged to obtain current market quotations for shares of our common stock.

Our principal executive offices are located at 3911 Sorrento Valley Boulevard, San Diego, California 92121, and our telephone number at that address is (858) 558-2871.

Investing in our common stock involves a high degree of risk. See **Risk Factors on page 1.**

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

February 10, 2006

You should rely only on the information contained in this prospectus and any related prospectus supplement or incorporated by reference in this prospectus. We have not, and the selling stockholder has not, authorized anyone to provide you with different information. No one is making offers to sell or seeking offers to buy our common stock in any jurisdiction where the offer or sale is not permitted. You should assume that the information contained in this prospectus is accurate only as of the date on the front of this prospectus and that any information we have incorporated by reference or included in any prospectus supplement is accurate only as of the date given in the document incorporated by reference or the prospectus supplement, as applicable, regardless of the time of delivery of this prospectus, any applicable prospectus supplement or any sale of our common stock. Our business, financial condition, results of operations and prospects may have changed since that date.

References in this prospectus to ACADIA, the Company, we, us and our refer to ACADIA Pharmaceuticals Inc., together with our wholly-owned subsidiaries, ACADIA Pharmaceuticals AB and ACADIA Pharmaceuticals A/S.

ACADIA and R-SAT are our trademarks. This prospectus also includes trademarks and trade names owned by other parties, and these trademarks and trade names are the property of their respective owners. Use or display by us of other parties' trademarks, trade dress or products in this prospectus is not intended to, and does not imply a relationship with, or endorsements or sponsorship of, us by the trademark or trade dress owners.

RISK FACTORS

An investment in our common stock is risky. Prior to making a decision about investing in our common stock, you should carefully consider the specific risks discussed under "Risk Factors" in the applicable prospectus supplement and in our filings with the Securities and Exchange Commission, or SEC, and incorporated by reference in this prospectus, together with all of the other information contained in this prospectus, any applicable prospectus supplement, or incorporated by reference in this prospectus. The risks and uncertainties described in the applicable prospectus supplement and in our SEC filings are not the only ones facing us. Additional risks and uncertainties not presently known to us, or that we currently see as immaterial, may also harm our business. If any of the risks or uncertainties described in the prospectus supplement or our SEC filings or any such additional risks and uncertainties actually occur, our business, results of operations and financial condition could be materially and adversely affected. In that case, the trading price of our common stock could decline, and you might lose all or part of your investment.

RECENT EVENT

On January 13, 2006, we completed the sale of the second of two tranches of \$10 million of our common stock to Sepracor Inc. in connection with the collaboration between Sepracor and us that was formed on January 10, 2005. Sepracor purchased the shares of our common stock at a 25 percent premium to the average closing sales price for the 30 trading days prior to the one-year anniversary of the collaboration. We issued 813,393 shares of our common stock to Sepracor in the second tranche at a price per share of approximately \$12.2942. For additional information about the sales of our common stock to Sepracor, please see "Selling Stockholder."

The shares of our common stock issued to Sepracor were issued pursuant to the exemption from the registration requirements of the Securities Act, afforded by Section 4(2) of the Securities Act and Rule 506 of Regulation D thereunder, as a transaction to an accredited investor not involving a public offering. Sepracor represented its intention to acquire the securities for investment only and not with a view to or for sale in connection with any distribution thereof and an appropriate legend was affixed to the share certificate issued to Sepracor.

NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains, and the documents incorporated by reference herein and any prospectus supplement hereto may contain, 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"). These statements relate to future events or to our future financial performance and involve known and unknown risks, uncertainties and other factors which may cause our actual results, performance or achievements to be materially different from any future results, performances or achievements expressed or implied by the forward-looking statements. Forward-looking statements may include, but are not limited to statements about:

the progress of clinical trials involving our drug candidates;

the progress of our research and development programs;

the benefits to be derived from relationships with our collaborators;

the receipt of regulatory clearances and approvals;

our estimates of future revenues and profitability; and

our estimates regarding our capital requirements and our need for additional financing.

In some cases, you can identify forward-looking statements by terms such as "may," "will," "should," "could," "would," "expects," "plans," "anticipates," "believes," "estimates," "projects," "predicts," "potential,"

and similar expressions intended to identify forward-looking statements. These statements reflect our current views with respect to future events and are based on assumptions and subject to risks and uncertainties. Given these uncertainties, you should not place undue reliance on these forward-looking statements. We discuss many of these risks in greater detail under the heading "Risk Factors" in the applicable prospectus supplement and in our SEC filings. Also, these forward-looking statements represent our estimates and assumptions only as of the date of the document containing the applicable statement.

You should read this prospectus, the registration statement of which this prospectus is a part, the documents incorporated by reference herein, and any applicable prospectus supplement completely and with the understanding that our actual future results may be materially different from what we expect. We qualify all of the forward-looking statements in the foregoing documents by these cautionary statements.

You should rely only on the information contained, or incorporated by reference, in this prospectus and any applicable prospectus supplement. We have not, and the selling stockholder has not, authorized anyone to provide you with different information. The common stock offered under this prospectus is not being offered in any state where the offer is not permitted. You should not assume that the information provided by this prospectus is accurate as of any date other than the date on the front of this prospectus or that any information incorporated by reference in this prospectus or included in any prospectus supplement is accurate as of any date other than the date of the document incorporated by reference or the prospectus supplement, as applicable. Unless required by law, we undertake no obligation to update or revise any forward-looking statements to reflect new information or future events or developments. Thus, you should not assume that our silence over time means that actual events are bearing out as expressed or implied in such forward-looking statements.

USE OF PROCEEDS

We will retain broad discretion over the use of the net proceeds from the sale of our common stock offered by us under this prospectus. Unless we indicate otherwise in the applicable prospectus supplement, we anticipate that any net proceeds will be used for working capital and general corporate purposes. We will set forth in the applicable prospectus supplement our intended use for the net proceeds received from the sale of any common stock sold pursuant to that prospectus supplement.

We will not receive any proceeds from the sale of shares of our common stock by the selling stockholder pursuant to this prospectus.

SELLING STOCKHOLDER

On January 10, 2005, in connection with a collaboration between the parties, we entered into a common stock purchase agreement (the "Purchase Agreement") with Sepracor, the selling stockholder. Pursuant to the Purchase Agreement, Sepracor has purchased an aggregate of 1,890,422 shares of our common stock for an aggregate of \$20 million in two \$10 million tranches. On January 13, 2005, Sepracor purchased the first tranche of our common stock at a 40 percent premium to the average closing sales price for the 30 trading days prior to the signing of the Purchase Agreement. We issued 1,077,029 shares of our common stock to Sepracor in the first tranche at a price per share of approximately \$9.2848. On January 13, 2006, Sepracor purchased the second tranche of our common stock at a 25 percent premium to the average closing sales price for the 30 trading days prior to the one-year anniversary of the date of the Purchase Agreement. We issued 813,393 shares of our common stock to Sepracor in the second tranche at a price per share of approximately \$12.2942. This prospectus covers the aggregate 1,890,422 shares of our common stock issued to Sepracor pursuant to the Purchase Agreement and any additional shares that may be issued to prevent dilution resulting from stock splits, stock dividends, or similar transactions (the "Shares").

Sepracor may from time to time sell some, all or none of the Shares. In addition, Sepracor may sell, transfer or otherwise dispose of a portion of the Shares in transactions exempt from the registration requirements of the Securities Act. See Plan of Distribution. We do not know how long Sepracor will hold the Shares before selling them. We currently have no agreements, arrangements or understandings with Sepracor regarding the sale of any of the Shares other than as set forth in the Purchase Agreement and the related registration rights agreement.

The following table sets forth information as of January 16, 2006 relating to the number of shares of our common stock owned by Sepracor, the number of Shares that may be offered under this prospectus and the number of shares of our common stock to be owned by Sepracor after this offering is completed, assuming that all offered Shares are sold as contemplated herein. The number of shares in the column Number of Shares Being Offered represents all of the shares of our common stock that Sepracor may offer under this prospectus.

Except as otherwise disclosed in this prospectus, Sepracor does not have, and within the past three fiscal years has not had, any position, office or other material relationship with us.

Ownership is based upon information provided by Sepracor, Schedules 13D or 13G or other public documents filed with the SEC. The percentages of shares owned after the offering are based on 24,332,785 shares of our common stock outstanding as of January 16, 2006, which includes the Shares offered by this prospectus by Sepracor but excludes any shares that may be offered by us pursuant to this prospectus.

Sepracor may have sold or transferred, in transactions exempt from the registration requirements of the Securities Act, some or all of the Shares since the date on which the information in the table is presented. Information about Sepracor may change over time.

| Name | Shares of Common Stock Owned Prior to Offering | Number of Shares Being Offered | Shares Owned After Offering(1) | | % |
|---------------|--|--------------------------------|--------------------------------|---------|---|
| | | | Number | Percent | |
| Sepracor Inc. | 1,890,422 | 1,890,422 | | | |

(1) Assumes the sale of all Shares offered by Sepracor under this prospectus.

PLAN OF DISTRIBUTION

We or the selling stockholder may sell the common stock covered by this prospectus to one or more underwriters for public offering and sale by them and may also sell the common stock to investors directly or through agents. We will name any underwriter or agent involved in the offer and sale of common stock in the applicable prospectus supplement. We and the selling stockholder have reserved the right to sell or exchange common stock directly to investors on our own behalf in those jurisdictions where we are authorized to do so.

We or the selling stockholder may distribute the common stock from time to time in one or more transactions:

at a fixed price or prices, which may be changed;

at market prices prevailing at the time of sale;

at prices related to such prevailing market prices; or

at negotiated prices.

We or the selling stockholder may also, from time to time, authorize dealers, acting as our agents, to offer and sell common stock upon the terms and conditions set forth in the applicable prospectus supplement. We, the selling stockholder or the purchasers of common stock for whom the underwriters may act as agents, may

compensate underwriters in the form of underwriting discounts or commissions, in connection with the sale of common stock. Underwriters may sell the 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 may act as agent. Unless otherwise indicated in a prospectus supplement, an agent will be acting on a best efforts basis and a dealer will purchase common stock as a principal, and may then resell the common stock at varying prices to be determined by the dealer.

We will describe in the applicable prospectus supplement any compensation we or the selling stockholder pay to underwriters or agents in connection with the offering of common stock, and any discounts, concessions or commissions allowed by underwriters to participating dealers. The selling stockholder and dealers and agents participating in the distribution of common stock may be deemed to be underwriters, and any discounts and commissions received by them and any profit realized by them on resale of the common stock may be deemed to be underwriting discounts and commissions. We or the selling stockholder may enter into agreements to indemnify underwriters, dealers and agents against certain civil liabilities, including liabilities under the Securities Act and to reimburse these persons for certain expenses. We may grant underwriters who participate in the distribution of common stock we are offering under this prospectus an option to purchase additional shares to cover over-allotments, if any, in connection with the distribution.

To facilitate the offering of common stock, certain persons participating in the offering may engage in transactions that stabilize, maintain, or otherwise affect the price of the common stock. This may include over-allotments or short sales of the common stock, which involve the sale by persons participating in the offering of more common stock than we or the selling stockholder sold to them. In these circumstances, these persons would cover such over-allotments or short positions by making purchases in the open market or by exercising their over-allotment option, if any. In addition, these persons may stabilize or maintain the price of the common stock by bidding for or purchasing common stock in the open market or by imposing penalty bids, whereby selling concessions allowed to dealers participating in the offering may be reclaimed if common stock sold by them is repurchased in connection with stabilization transactions. The effect of these transactions may be to stabilize or maintain the market price of the common stock at a level above that which might otherwise prevail in the open market. These transactions may be discontinued at any time.

In connection with the sale of Shares or interests therein, the selling stockholder may enter into hedging transactions with broker-dealers or other financial institutions, which may, in turn, engage in short sales of shares of common stock in the course of hedging the positions they assume. The selling stockholder may also sell shares of our common stock short and deliver Shares to close out its short positions provided it has met its prospectus delivery obligations at the time of the short sale. The selling stockholder may also loan or pledge Shares to broker-dealers that in turn may sell the Shares offered hereby. The selling stockholder may also enter into option or other transactions with broker-dealers or other financial institutions or the creation of one or more derivative securities which require the delivery to such broker-dealer or other financial institution of Shares, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction). The selling stockholder may also sell the Shares in privately negotiated transactions, through block trades in which the broker-dealer will attempt to sell the Shares as agent but may position and resell a portion of the block as principal to facilitate the transaction, through an exchange distribution in accordance with the rules of the applicable exchange, ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers, to broker-dealers who may agree with the selling stockholder to sell a specified number of such Shares at a stipulated price per Share or a combination of any of the foregoing methods described in this paragraph.

The selling stockholder also may resell all or a portion of the Shares in open market transactions in reliance upon Rule 144 under the Securities Act, provided that it meets the criteria and those sales conform to the requirements of that rule.

From time to time, the selling stockholder may pledge or grant a security interest in some or all of the Shares that it owns and, if it defaults in the performance of its secured obligations, the pledgees or secured parties

may offer and sell some or all of the Shares from time to time under this prospectus or an amendment to this prospectus under Rule 424(b)(3) of the Securities Act, or another applicable provision of the Securities Act, which amends the list of selling stockholders to include the pledgees, transferees or other successors-in-interest as the selling stockholder under this prospectus.

The selling stockholder also may transfer the Shares in other circumstances, in which case the transferees, pledgees or other successors-in-interest will be the reselling beneficial owners for purposes of this prospectus.

Under applicable rules and regulations under the Exchange Act, any person engaged in the distribution of the Shares may not simultaneously engage in market making activities with respect to our common stock for a period of two business days prior to the commencement of such distribution. In addition, the selling stockholder will be subject to 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 the selling stockholder's purchases and sales of the Shares. We will make copies of this prospectus available to the selling stockholder and have informed it of the need for delivery of copies of this prospectus to purchasers at or prior to the time of any sale of the Shares.

To the extent required pursuant to Rule 424(b) of the Securities Act, or other applicable rule, upon being notified by the selling stockholder that any material arrangement has been entered into with a broker-dealer for the sale of the Shares through a block trade, special offering, exchange distribution or secondary distribution or purchase by a broker or dealer, we will file a supplement to this prospectus. Such supplement will disclose:

the name of the participating broker-dealer(s);

the number of Shares involved;

the price at which such Shares were sold;

the commissions paid or discounts or concessions allowed to such broker-dealer(s), where applicable;

that such broker-dealer(s) did not conduct any investigation to verify the information set out or incorporated by reference in this prospectus; and

other facts material to the transaction.

We will bear substantially all of the costs, expenses and fees in connection with the registration of the common stock, other than any commissions, discounts or other fees payable to broker-dealers in connection with any sale of Shares by the selling stockholder, which will be borne by the selling stockholder. We have agreed to indemnify the selling stockholder against certain liabilities, including liabilities under the Securities Act and state securities laws, relating to the registration of the Shares.

Certain underwriters, dealers or agents and their associates may engage in transactions with and perform services for us in the ordinary course of our business.

LEGAL MATTERS

Cooley Godward LLP, San Diego, California, has given its opinion to us as to certain legal matters relating to the validity of the shares of our common stock to be offered by us and the selling stockholder by this prospectus. The selling stockholder and any underwriters will be advised about the other issues relating to any offering by their own respective legal counsel.

EXPERTS

The financial statements incorporated in this prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2004 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given the

authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We are a reporting company and we file annual, quarterly and current reports, proxy statements and other information with the SEC. We have filed with the SEC a registration statement under the Securities Act with respect to the common stock offered hereby. This prospectus, which constitutes a part of the registration statement, does not contain all of the information set forth in the registration statement or the exhibits which are part of the registration statement. For further information with respect to us and the common stock offered by this prospectus, we refer you to the registration statement and the exhibits filed as part of the registration statement. You may read and copy any document we file 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. Our SEC filings are also available to the public from the SEC's website at www.sec.gov. We maintain a website at www.acadia-pharm.com.

The SEC allows us to incorporate by reference the information we file with it, which means that we can disclose important information to you by referring to those documents. The information incorporated by reference is an important part of this prospectus, and information that we file later with the SEC will automatically update and supersede this information. We incorporate by reference the following documents we filed with the SEC pursuant to Section 13 of the Exchange Act:

Annual Report on Form 10-K for the fiscal year ended December 31, 2004 (including information specifically incorporated by reference into our Form 10-K from our Proxy Statement for our 2005 Annual Meeting of Stockholders);

Quarterly Report on Form 10-Q for the quarters ended March 31, June 30, and September 30, 2005;

Current Reports on Form 8-K filed on January 14, April 20, April 29, August 25, September 13, November 3, and November 4, 2005, and January 18, 2006;

Description of our common stock contained in our registration statement on Form 8-A dated May 19, 2004; and

All documents filed by us with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus and before the last offering of the securities under this prospectus.

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Investor Relations

ACADIA Pharmaceuticals Inc.

3911 Sorrento Valley Boulevard

San Diego, CA 92121

(858) 558-2871

4,947,229 Shares

Common Stock

Prospectus Supplement

April 27, 2006

Banc of America Securities LLC

Lehman Brothers

Piper Jaffray

JMP Securities

Canaccord Adams