
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

**Amendment No. 2 to Form 8-A
on Form 8-A/A**

**For Registration of Certain Classes of Securities
Pursuant to Section 12(b) or (g) of the
Securities Exchange Act of 1934**

Anylam Pharmaceuticals, Inc.

(Exact name of registrant as specified in its charter)

Delaware

(State of Incorporation
or Organization)

77-0602661

(I.R.S. Employer
Identification No.)

300 Third Street, Cambridge, Massachusetts

(Address of Principal Executive Offices)

02142

(Zip Code)

If this form relates to the registration of a class of securities pursuant to Section 12(b) of the Exchange Act and is effective pursuant to General Instruction A.(c), please check the following box.

If this form relates to the registration of a class of securities pursuant to Section 12(g) of the Exchange Act and is effective pursuant to General Instruction A.(d), please check the following box.

Securities Act registration statement file number to which this form relates: 333-113162

(If applicable)

Securities to be registered pursuant to Section 12(b) of the Act:

Title of Each Class
to be so Registered

Name of Each Exchange on Which
Each Class is to be Registered

Securities to be registered pursuant to Section 12(g) of the Act:

Common Stock (including associated Series A Junior Participating Preferred Stock Rights), \$0.01 par value per share

(Title of Class)

EXPLANATORY NOTE

The undersigned registrant is filing this Amendment No. 2 to Form 8-A on Form 8-A/A to amend information set forth in the Registrant's Registration Statement on Form 8-A dated May 5, 2004, as amended by Amendment No. 1 to Form 8-A on Form 8-A/A dated June 3, 2004 (as amended, the "Form 8-A").

INFORMATION REQUIRED IN REGISTRATION STATEMENT

Item 1 of the Form 8-A is hereby amended and restated to read as follows:

Item 1: Description of Registrant's Securities to be Registered.

The following description of our common stock and preferred stock summarizes the material terms and provisions of these types of securities. For the complete terms of our common stock and preferred stock, please refer to our restated certificate of incorporation and our amended and restated by-laws, which have been filed with the Securities and Exchange Commission. The terms of these securities may also be affected by Delaware law.

Under the terms of our restated certificate of incorporation, our authorized capital stock consists of 125,000,000 shares of common stock, \$.01 par value per share ("Common Stock"), and 5,000,000 shares of preferred stock, \$.01 par value per share ("Preferred Stock"), of which 125,000 shares are designated Series A Junior Participating Preferred Stock ("Series A Junior Preferred Stock") in connection with the Rights Plan described below. The rights and preferences of the remaining authorized Preferred Stock may be established from time to time by our board of directors.

Common Stock

Holders of Common Stock are entitled to one vote for each share held on all matters submitted to a vote of stockholders and do not have cumulative voting rights. Accordingly, holders of a majority of the shares of Common Stock entitled to vote in any election of directors may elect all of the directors standing for election. Holders of Common Stock are entitled to receive proportionately any dividends as may be declared by our board of directors, subject to any preferential dividend rights of outstanding Preferred Stock. Upon our liquidation, dissolution or winding up, the holders of Common Stock are entitled to receive proportionately our net assets available after the payment of all debts and other liabilities and subject to the prior rights of any outstanding Preferred Stock. Holders of Common Stock have no preemptive, subscription, redemption or conversion rights. All outstanding shares of Common Stock are fully paid and nonassessable. The rights, preferences and privileges of holders of Common Stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of Preferred Stock that we may designate and issue in the future.

As of June 30, 2005, 20,918,703 shares of our Common Stock were outstanding and there were approximately 75 stockholders of record.

Preferred Stock

Under the terms of our restated certificate of incorporation, our board of directors is authorized to issue shares of Preferred Stock in one or more series without stockholder approval. Our board of directors has the discretion to determine the rights, preferences, privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences, of each series of Preferred Stock.

The purpose of authorizing our board of directors to issue Preferred Stock and determine its right and preferences is to eliminate delays associated with a stockholder vote on specific issuances. The issuance of Preferred Stock, while providing flexibility in connection with possible future acquisitions and other corporate purposes, will affect, and may adversely affect, the rights of holders of any Preferred Stock that may be issued in the future. It is not possible to state the actual effect of the issuance of any shares of Preferred Stock on the rights of holders of Common Stock until the board of directors determines the specific rights attached to that Preferred Stock. The effects of issuing Preferred Stock could include one or more of the following:

- restricting dividends on the Common Stock;
- diluting the voting power of the Common Stock;
- impairing the liquidation rights of the Common Stock; or
- delaying or preventing changes in control or management of the Registrant.

Except as described herein, we have no present plans to issue any shares of Preferred Stock.

On July 13, 2005, in connection with the Rights Plan described below, our board of directors designated 125,000 shares of Preferred Stock as Series A Junior Preferred Stock, as set forth in the Certificate of Designations of Series A Junior Participating Preferred Stock filed with the Secretary of State of the State of Delaware on July 14, 2005 and summarized below.

Rights Plan

On July 13, 2005, the Board of Directors of the Registrant declared a dividend of one Right (each, a "Right") for each outstanding share of the Registrant's Common Stock to stockholders of record at the close of business on July 26, 2005 (the "Record Date"). Each Right entitles the registered holder to purchase from the Registrant one one-thousandth of a share of Series A Junior Preferred Stock at a purchase price of \$80 (the "Purchase Price") in cash, subject to adjustment. The description and terms of the Rights are set forth in a Rights Agreement dated as of July 13, 2005 (the "Rights Agreement") between the Registrant and EquiServe Trust Company, N.A., as Rights Agent. This summary description of the Rights does not purport to be complete and is qualified in its entirety by reference to the Rights Agreement, which is incorporated herein by reference.

Initially, the Rights are not exercisable and will be attached to all certificates representing outstanding shares of Common Stock, and no separate Rights Certificates will be distributed. The Rights will separate from the Common Stock, and the distribution date (the "Distribution Date") will occur, upon the earlier of (i) 10 business days following the later of (a) the first date of a public announcement that a person or group of

affiliated or associated persons (an "Acquiring Person") has acquired, or obtained the right to acquire, beneficial ownership of 20% or more of the outstanding shares of Common Stock or (b) the first date on which an executive officer of the Registrant has actual knowledge that an Acquiring Person has become such (the "Stock Acquisition Date") or (ii) 10 business days following the commencement of a tender offer or exchange offer that would result in a person or group beneficially owning 20% or more of the outstanding shares of Common Stock. The Distribution Date may be deferred in circumstances determined by the Board of Directors. In addition, certain inadvertent acquisitions will not trigger the occurrence of the Distribution Date. Until the Distribution Date (or earlier redemption or expiration of the Rights), (i) the Rights will be evidenced by the Common Stock certificates outstanding on the Record Date, together with a Summary of Rights to be mailed to record holders, or by new Common Stock certificates issued after the Record Date which contain a notation incorporating the Rights Agreement by reference, (ii) the Rights will be transferred with and only with such Common Stock certificates, and (iii) the surrender for transfer of any certificates for Common Stock outstanding (with or without a copy of the Summary of Rights or such notation) will also constitute the transfer of the Rights associated with the Common Stock represented by such certificate.

The Rights are not exercisable until the Distribution Date and will expire upon the close of business on July 13, 2015 (the "Final Expiration Date") unless earlier redeemed or exchanged as described below. As soon as practicable after the Distribution Date, separate Rights Certificates will be mailed to holders of record of the Common Stock as of the close of business on the Distribution Date and, thereafter, the separate Rights Certificates alone will represent the Rights. Except as otherwise determined by the Board of Directors, and except for shares of Common Stock issued upon exercise, conversion or exchange of then outstanding options, convertible or exchangeable securities or other contingent obligations to issue shares or pursuant to any employee benefit plan or arrangement, only shares of Common Stock issued prior to the Distribution Date will be issued with Rights.

In the event that any Person becomes an Acquiring Person, unless the event causing the 20% threshold to be crossed is a Permitted Offer (as defined in the Rights Agreement), then, promptly following the first occurrence of such event, each holder of a Right (except as provided below and in Section 7(e) of the Rights Agreement) shall thereafter have the right to receive, upon exercise, that number of shares of Common Stock of the Registrant (or, in certain circumstances, cash, property or other securities of the Registrant) which equals the exercise price of the Right divided by 50% of the current market price (as defined in the Rights Agreement) per share of Common Stock at the date of the occurrence of such event. However, Rights are not exercisable following such event until such time as the Rights are no longer redeemable by the Registrant as described below. Notwithstanding any of the foregoing, following the occurrence of such event, all Rights that are, or (under certain circumstances specified in the Rights Agreement) were, beneficially owned by any Acquiring Person will be null and void. The event summarized in this paragraph is referred to as a "Section 11(a)(ii) Event."

For example, at an exercise price of \$80 per Right, each Right not owned by an Acquiring Person (or by certain related parties) following a Section 11(a)(ii) Event would entitle its holder to purchase for \$80 such number of shares of Common Stock (or other consideration,

as noted above) as equals \$80 divided by one-half of the current market price (as defined in the Rights Agreement) of the Common Stock. Assuming that the Common Stock had a market price of \$20 per share at such time, the holder of each valid Right would be entitled to purchase eight shares of Common Stock, having a market value of $8 \times \$20$, or \$160, for \$80.

In the event that, at any time after any Person becomes an Acquiring Person, (i) the Registrant is consolidated with, or merged with and into, another entity and the Registrant is not the surviving entity of such consolidation or merger (other than a consolidation or merger which follows a Permitted Offer) or if the Registrant is the surviving entity, but shares of its outstanding Common Stock are changed or exchanged for stock or securities (of any other person) or cash or any other property, or (ii) more than 50% of the Registrant's assets or earning power is sold or transferred, each holder of a Right (except Rights which previously have been voided as set forth above) shall thereafter have the right to receive, upon exercise, that number of shares of common stock of the acquiring company which equals the exercise price of the Right divided by 50% of the current market price (as defined in the Rights Agreement) of such common stock at the date of the occurrence of the event. The events summarized in this paragraph are referred to as "Section 13 Events." A Section 11(a)(ii) Event and Section 13 Events are collectively referred to as "Triggering Events."

For example, at an exercise price of \$80 per Right, each valid Right following a Section 13 Event would entitle its holder to purchase for \$80 such number of shares of common stock of the acquiring company as equals \$80 divided by one-half of the current market price (as defined in the Rights Agreement) of such common stock. Assuming that such common stock had a market price of \$20 per share at such time, the holder of each valid Right would be entitled to purchase eight shares of common stock of the acquiring company, having a market value of $8 \times \$20$, or \$160, for \$80.

At any time after the occurrence of a Section 11(a)(ii) Event, when no person owns a majority of the Common Stock, the Board of Directors of the Registrant may exchange the Rights (other than Rights owned by such Acquiring Person which have become void), in whole or in part, at an exchange ratio of one share of Common Stock, or one one-thousandth of a share of Series A Junior Preferred Stock (or of a share of a class or series of the Registrant's Preferred Stock having equivalent rights, preferences and privileges), per Right (subject to adjustment).

The Purchase Price payable, and the number of units of Series A Junior Preferred Stock or other securities or property issuable, upon exercise of the Rights are subject to adjustment from time to time to prevent dilution (i) in the event of a stock dividend on, or a subdivision, combination or reclassification of, the Series A Junior Preferred Stock, (ii) if holders of the Series A Junior Preferred Stock are granted certain rights or warrants to subscribe for Series A Junior Preferred Stock or convertible securities at less than the then-current market price (as defined in the Rights Agreement) of the Series A Junior Preferred Stock, or (iii) upon the distribution to holders of the Series A Junior Preferred Stock of evidences of indebtedness or assets (excluding regular periodic cash dividends paid out of earnings or retained earnings) or of subscription rights or warrants (other than those referred to above). The number of Rights associated with each share of Common Stock is also subject to adjustment in the event of a stock split of the Common Stock or a stock dividend on the Common Stock payable in Common Stock

or subdivisions, consolidations or combinations of the Common Stock occurring, in any such case, prior to the Distribution Date.

With certain exceptions, no adjustment in the Purchase Price will be required until cumulative adjustments amount to at least 1% of the Purchase Price. No fractional shares of Series A Junior Preferred Stock (other than fractions which are integral multiples of one one-thousandth of a share of Series A Junior Preferred Stock) will be issued and, in lieu thereof, an adjustment in cash will be made based on the market price of the Series A Junior Preferred Stock on the last trading date prior to the date of exercise.

Series A Junior Preferred Stock purchasable upon exercise of the Rights will not be redeemable. Each share of Series A Junior Preferred Stock will be entitled to receive, when, as and if declared by the Board of Directors, a minimum preferential quarterly dividend payment of \$10 per share or, if greater, an aggregate dividend of 1000 times the dividend declared per share of Common Stock. In the event of liquidation, the holders of the Series A Junior Preferred Stock will be entitled to a minimum preferential liquidation payment of \$1000 per share, plus an amount equal to accrued and unpaid dividends, and will be entitled to an aggregate payment of 1000 times the payment made per share of Common Stock. Each share of Series A Junior Preferred Stock will have 1000 votes, voting together with the Common Stock. In the event of any merger, consolidation or other transaction in which Common Stock is changed or exchanged, each share of Series A Junior Preferred Stock will be entitled to receive 1000 times the amount received per share of Common Stock. These rights are protected by customary antidilution provisions. Because of the nature of the Series A Junior Preferred Stock's dividend, liquidation and voting rights, the value of one one-thousandth of a share of Series A Junior Preferred Stock purchasable upon exercise of each Right should approximate the value of one share of Common Stock.

At any time prior to the earlier of the tenth Business Day (or such later date as may be determined by the Board of Directors of the Registrant) after the Stock Acquisition Date, the Registrant may redeem the Rights in whole, but not in part, at a price of \$0.001 per Right (the "Redemption Price"), payable in cash or stock. Immediately upon the redemption of the Rights or such earlier time as established by the Board in the resolution ordering the redemption of the Rights, the Rights will terminate and the only right of the holders of Rights will be to receive the Redemption Price.

At least once every three years, a committee of independent directors will evaluate the Rights Agreement in order to consider whether the maintenance of the Rights Agreement continues to be in the interests of the Registrant and its stockholders.

Until a Right is exercised, the holder thereof, as such, will have no rights as a stockholder of the Registrant, including, without limitation, the right to vote or to receive dividends. Although the distribution of the Rights should not be taxable to stockholders or to the Registrant, stockholders may, depending upon the circumstances, recognize taxable income in the event that the Rights become exercisable for Common Stock (or other consideration) of the Registrant or for common stock of the acquiring company as set forth above.

Any provision of the Rights Agreement, other than the redemption price, may be amended by the Board prior to such time as the Rights are no longer redeemable. Once the Rights are no longer redeemable, the Board's authority to amend the Rights is limited to correcting ambiguities or defective or inconsistent provisions in a manner that does not adversely affect the interest of holders of Rights.

The Rights are intended to protect the stockholders of the Registrant in the event of an unfair or coercive offer to acquire the Registrant and to provide the Board with adequate time to evaluate unsolicited offers. The Rights may have anti-takeover effects. The Rights will cause substantial dilution to a person or group that attempts to acquire the Registrant without conditioning the offer on a substantial number of Rights being acquired. The Rights, however, should not affect any prospective offeror willing to make an offer at a fair price and otherwise in the best interests of the Registrant and its stockholders, as determined by the Board. The Rights should not interfere with any merger or other business combination approved by the Board.

Warrants

As of June 30, 2005, Lighthouse Capital Partners V, L.P. and a related entity held warrants to purchase an aggregate of 52,630 shares of Common Stock at an exercise price of \$9.50 per share. These warrants expire on March 30, 2011. The holders of these warrants have registration rights that are outlined below under the heading "Registration Rights."

Registration Rights

As of June 30, 2005, the holders of 11,498,544 shares of Common Stock have rights to require us to file registration statements under the Securities Act or to include their shares in registration statements that we may file in the future for ourselves or other stockholders. The holders of warrants to purchase 52,630 shares of our Common Stock will be entitled to include shares issued upon exercise of the warrants in registration statements that we may file in the future.

Holders of at least 33% of the shares of our Common Stock having registration rights may demand that we register all or a portion of their Common Stock for sale under the Securities Act. We are required to effect only two of these registrations. However, if at any time we become eligible to file a registration statement on Form S-3, or any successor form, holders of registration rights may make unlimited requests for us to effect a registration on such forms of their Common Stock having an aggregate offering price of at least \$3,000,000.

In addition, if we register any shares of Common Stock, either for our own account or for the account of other security holders, the holders of registration rights are entitled to notice of the registration and to include all or a portion of their Common Stock in the registration. A holder's right to demand or include shares in a registration is subject to the right of the underwriters to limit the number of shares included in the offering.

Anti-Takeover Provisions of Delaware Law, our Restated Certificate of Incorporation and our Amended and Restated Bylaws

We are subject to the provisions of Section 203 of the General Corporation Law of Delaware. Subject to certain exceptions, Section 203 prohibits a publicly held Delaware corporation from engaging in a business combination with an interested stockholder for a period of three years after the person became an interested stockholder, unless the interested stockholder attained such status with the approval of our board of directors or the business combination is approved in a prescribed manner. A business combination includes, among other things, a merger or consolidation involving us and the interested stockholder and the sale of more than 10% of our assets. In general, an interested stockholder is any entity or person beneficially owning 15% or more of our outstanding voting stock and any entity or person affiliated with or controlling or controlled by such entity or person.

Our restated certificate of incorporation and our amended and restated bylaws divide our board of directors into three classes with staggered three-year terms. In addition, our restated certificate of incorporation provides that directors may be removed only for cause by the affirmative vote of the holders of 75% of our shares of capital stock entitled to vote. Under our restated certificate of incorporation, any vacancy on our board of directors, including a vacancy resulting from an enlargement of our board of directors, may only be filled by vote of a majority of our directors then in office. The classification of our board of directors and the limitations on the removal of directors and filling of vacancies could make it more difficult for a third party to acquire, or discourage a third party from acquiring, control of us.

Our restated certificate of incorporation and our amended and restated bylaws also provide that any action required or permitted to be taken by our stockholders at an annual meeting or special meeting of stockholders may only be taken if it is properly brought before the meeting and may not be taken by written action in lieu of a meeting. Our restated certificate of incorporation and our amended and restated bylaws further provide that, except as otherwise required by law, special meetings of the stockholders may only be called by the chairman of the board, chief executive officer or our board of directors. In addition, our amended and restated bylaws establish an advance notice procedure for stockholder proposals to be brought before an annual meeting of stockholders, including proposed nominations of persons for election to the board of directors. Stockholders at an annual meeting may only consider proposals or nominations specified in the notice of meeting or brought before the meeting by or at the direction of the board of directors or by a stockholder of record on the record date for the meeting, who is entitled to vote at the meeting and who has delivered timely written notice in proper form to our secretary of the stockholder's intention to bring such business before the meeting. These provisions could have the effect of delaying until the next stockholders' meeting stockholder actions that are favored by the holders of a majority of our outstanding voting securities. These provisions may also discourage a third party from making a tender offer for our Common Stock, because even if it acquired a majority of our outstanding voting securities, the third party would be able to take action as a stockholder, such as electing new directors or approving a merger, only at a duly called stockholders' meeting, and not by written consent.

The General Corporation Law of Delaware provides generally that the affirmative vote of a majority of the shares entitled to vote on any matter is required to amend a corporation's certificate of incorporation or bylaws, unless a corporation's certificate of incorporation or bylaws, as the case may be, requires a greater percentage. Our restated certificate of incorporation and amended and restated bylaws require the affirmative vote of the holders of at least 75% of the shares of our capital stock issued and outstanding and entitled to vote to amend or repeal any of the provisions described in the prior two paragraphs.

Limitation of Liability and Indemnification

Our restated certificate of incorporation contains provisions permitted under the General Corporation Law of Delaware relating to the liability of directors. The provisions eliminate a director's liability for monetary damages for a breach of fiduciary duty, except in circumstances involving wrongful acts, such as the breach of a director's duty of loyalty or acts or omissions that involve intentional misconduct or a knowing violation of law. Further, our restated certificate of incorporation contains provisions to indemnify our directors and officers to the fullest extent permitted by the General Corporation Law of Delaware.

Transfer Agent and Registrar

The transfer agent and registrar for our Common Stock is EquiServe Trust Company, N.A.

NASDAQ National Market

Our Common Stock is quoted on the NASDAQ National Market under the symbol "ALNY."

Item 2 of the Form 8-A is hereby amended and restated to read as follows:

Item 2: Exhibits.

The following exhibits are filed herewith (or incorporated by reference as indicated below):

1. Restated Certificate of Incorporation of the Registrant, incorporated by reference to Exhibit 3.1 to the Registrant's Quarterly Report on Form 10-Q (File No. 000-5074) for the quarterly period ended June 30, 2004).
 2. Amended and Restated Bylaws of the Registrant, incorporated by reference to Exhibit 3.4 to the Registrant's Registration Statement on Form S-1 (File No. 333-113162).
 3. Right Agreement dated as of July 13, 2005 between the Registrant and EquiServe Trust Company, N.A., as Rights Agent, which includes as Exhibit A the Form of Certificate of Designations of Series A Junior Participating Preferred Stock, as Exhibit B the Form of Rights Certificate and as Exhibit C the Summary of Rights
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to Purchase Preferred Stock, incorporated by reference to Exhibit 4.1 to the Current Report on Form 8-K filed with SEC on July 14, 2005.

SIGNATURE

Pursuant to the requirements of Section 12 of the Securities Exchange Act of 1934, the Registrant has duly caused this Amendment No. 2 to registration statement to be signed on its behalf by the undersigned, thereto duly authorized.

ALNYLAM PHARMACEUTICALS, INC.

Date: July 14, 2005

By: /s/ John M. Maraganore, Ph.D.
John M. Maraganore, Ph.D.
President and Chief Executive Officer