

SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Schedule 13G
(Rule 13d-102)

INFORMATION TO BE INCLUDED IN STATEMENTS FILED PURSUANT TO RULES 13d-1 (b), (c)
AND (d) AND AMENDMENTS THERETO FILED PURSUANT TO 13d-2 (b)
(Amendment No.____)*

Alnylam Pharmaceuticals, Inc.

(Name of Issuer)

Common Stock

(Title of Class of Securities)

02043Q107

(CUSIP Number)

May 28, 2004

(Date of Event Which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

- Rule 13d-1(b)
 Rule 13d-1(c)
 Rule 13d-1(d)

*The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter disclosures provided in a prior cover page.

The information required on the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

(Continued on following pages)

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1 NAME OF REPORTING
SS OR I.R.S. IDENTIFICATION NO. OF ABOVE PERSON
Polaris Venture Partners III, L.P. ("PVP III")
Tax ID Number:

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP*
(a) (b)

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION
Delaware

5 SOLE VOTING POWER
NUMBER OF 2,710,141 shares, except that Polaris Venture
SHARES Management Co. III, L.L.C. ("Polaris III"), the
BENEFICIALLY general partner of PVP III, may be deemed to have sole

OWNED BY EACH
REPORTING
PERSON
WITH

power to vote these shares, and Jonathan A. Flint ("Flint"), Terrance G. McGuire ("McGuire"), Stephen D. Arnold ("Arnold") and Alan G. Spoon ("Spoon"), the managing members of Polaris III, may be deemed to have shared power to vote these shares.

6 SHARED VOTING POWER
See response to row 5.

7 SOLE DISPOSITIVE POWER
2,710,141 shares, except that Polaris III, the general partner of PVP III, may be deemed to have sole power to dispose of these shares, and Flint, McGuire, Arnold and Spoon, the managing members of Polaris III, may be deemed to have shared power to dispose of these shares.

8 SHARED DISPOSITIVE POWER
See response to row 7.

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH
REPORTING PERSON 2,710,141

10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9)
EXCLUDES CERTAIN SHARES* []

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9
14.1%

12 TYPE OF REPORTING PERSON*
PN

* SEE INSTRUCTIONS BEFORE FILLING OUT!

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1 NAME OF REPORTING
SS OR I.R.S. IDENTIFICATION NO. OF ABOVE PERSON
Polaris Venture Partners Entrepreneurs' Fund III, L.P.
("Entrepreneurs' III")
Tax ID Number:

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) [] (b) [X]

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION
Delaware

5 SOLE VOTING POWER
70,242 shares, except that Polaris III, the general partner of Entrepreneurs' III, may be deemed to have sole power to vote these shares, and Flint, McGuire, Arnold and Spoon, the managing members of Polaris III, may be deemed to have shared power to vote these shares.

6 SHARED VOTING POWER
See response to row 5.

7 SOLE DISPOSITIVE POWER
70,242 shares, except that Polaris III, the general partner of Entrepreneurs' III, may be deemed to have sole power to dispose of these shares, and Flint, McGuire, Arnold and Spoon, the managing members of Polaris III, may be deemed to have shared power to

dispose of these shares.

8 SHARED DISPOSITIVE POWER
See response to row 7.

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH
REPORTING PERSON 70,242

10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9)
EXCLUDES CERTAIN SHARES* []

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9
0.4%

12 TYPE OF REPORTING PERSON*
PN

* SEE INSTRUCTIONS BEFORE FILLING OUT!

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1 NAME OF REPORTING
SS OR I.R.S. IDENTIFICATION NO. OF ABOVE PERSON
Polaris Venture Partners Founders' Fund III, L.P. ("Founders' III")
Tax ID Number:

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP*
(a) [] (b) [X]

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION
Delaware

5 SOLE VOTING POWER
42,646 shares, except that Polaris III, the general
partner of Founders' III, may be deemed to have sole
power to vote these shares, and Flint, McGuire, Arnold
and Spoon, the managing members of Polaris III, may be
deemed to have shared power to vote these shares.

6 SHARED VOTING POWER
See response to row 5.

7 SOLE DISPOSITIVE POWER
42,646 shares, except that Polaris III, the general
partner of Founders' III, may be deemed to have sole
power to dispose of these shares, and Flint, McGuire,
Arnold and Spoon, the managing members of Polaris III,
may be deemed to have shared power to dispose of these
shares.

8 SHARED DISPOSITIVE POWER
See response to row 7.

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH
REPORTING PERSON 42,646

10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9)
EXCLUDES CERTAIN SHARES* []

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9
0.2%

12 TYPE OF REPORTING PERSON*
PN

* SEE INSTRUCTIONS BEFORE FILLING OUT!

1	NAME OF REPORTING SS OR I.R.S. IDENTIFICATION NO. OF ABOVE PERSON Polaris Venture Management Co. III, L.L.C. ("Polaris III") Tax ID Number:

2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) [] (b) [X]

3	SEC USE ONLY

4	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware

5	SOLE VOTING POWER 2,823,029 shares, of which 2,710,141 are directly owned by PVP III, 70,242 are directly owned by Entrepreneurs' III and 42,646 are directly owned by Founders' III. Polaris III, the general partner of PVP III, Entrepreneurs' III and Founders' III, may be deemed to have sole power to vote these shares, and Flint, McGuire, Arnold and Spoon, the managing members of Polaris III, may be deemed to have shared power to vote these shares.

6	SHARED VOTING POWER See response to row 5.

7	SOLE DISPOSITIVE POWER 2,823,029 shares, of which 2,710,141 are directly owned by PVP III, 70,242 are directly owned by Entrepreneurs' III and 42,646 are directly owned by Founders' III. Polaris III, the general partner of PVP III, Entrepreneurs' III and Founders' III, may be deemed to have sole power to dispose of these shares, and Flint, McGuire, Arnold and Spoon, the managing members of Polaris III, may be deemed to have shared power to dispose of these shares.

8	SHARED DISPOSITIVE POWER See response to row 7.

9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 2,823,029

10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES* []

11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9 14.6%

12	TYPE OF REPORTING PERSON* OO

* SEE INSTRUCTIONS BEFORE FILLING OUT!

1	NAME OF REPORTING SS OR I.R.S. IDENTIFICATION NO. OF ABOVE PERSON Jonathan A. Flint ("Flint") Tax ID Number:

2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) [] (b) [X]

3	SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION
U.S. Citizen

5 SOLE VOTING POWER
0 shares.

NUMBER OF
SHARES

6 SHARED VOTING POWER
2,823,029 shares, of which 2,710,141 are directly
owned by PVP III, 70,242 are directly owned by
Entrepreneurs' III and 42,646 are directly owned by
Founders' III. Polaris III is the general partner of
PVP III, Entrepreneurs' III and Founders' III. Flint
is a managing member of Polaris III, and may be deemed
to have shared power to vote these shares.

7 SOLE DISPOSITIVE POWER
0 shares.

8 SHARED DISPOSITIVE POWER
2,823,029 shares, of which 2,710,141 are directly
owned by PVP III, 70,242 are directly owned by
Entrepreneurs' III and 42,646 are directly owned by
Founders' III. Polaris III is the general partner of
PVP III, Entrepreneurs' III and Founders' III. Flint
is a managing member of Polaris III, and may be deemed
to have shared power to dispose of these shares.

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH
REPORTING PERSON 2,823,029

10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9)
EXCLUDES CERTAIN SHARES* []

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9 14.6%

12 TYPE OF REPORTING PERSON* IN

* SEE INSTRUCTIONS BEFORE FILLING OUT!

1 NAME OF REPORTING
SS OR I.R.S. IDENTIFICATION NO. OF ABOVE PERSON
Terrance G. McGuire ("McGuire")
Tax ID Number:

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) [] (b) [X]

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION
U.S. Citizen

5 SOLE VOTING POWER
0 shares.

NUMBER OF
SHARES

6 SHARED VOTING POWER
2,823,029 shares, of which 2,710,141 are directly
owned by PVP III, 70,242 are directly owned by
Entrepreneurs' III and 42,646 are directly owned by
Founders' III. Polaris III is the general partner of
PVP III, Entrepreneurs' III and Founders' III. McGuire
is a managing member of Polaris III, and may be deemed
to have shared power to vote these shares.

7 SOLE DISPOSITIVE POWER

0 shares.

8 SHARED DISPOSITIVE POWER
2,823,029 shares, of which 2,710,141 are directly
owned by PVP III, 70,242 are directly owned by
Entrepreneurs' III and 42,646 are directly owned by
Founders' III. Polaris III is the general partner of
PVP III, Entrepreneurs' III and Founders' III. McGuire
is a managing member of Polaris III, and may be deemed
to have shared power to dispose of these shares.

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH
REPORTING PERSON 2,823,029

10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9)
EXCLUDES CERTAIN SHARES* []

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9
14.6%

12 TYPE OF REPORTING PERSON*
IN

* SEE INSTRUCTIONS BEFORE FILLING OUT!

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1 NAME OF REPORTING
SS OR I.R.S. IDENTIFICATION NO. OF ABOVE PERSON
Stephen D. Arnold ("Arnold")
Tax ID Number:

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) [] (b) [X]

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION
U.S. Citizen

5 SOLE VOTING POWER
0 shares.

NUMBER OF
SHARES
BENEFICIALLY
OWNED BY EACH
REPORTING
PERSON
WITH
6 SHARED VOTING POWER
2,823,029 shares, of which 2,710,141 are directly
owned by PVP III, 70,242 are directly owned by
Entrepreneurs' III and 42,646 are directly owned by
Founders' III. Polaris III is the general partner
of PVP III, Entrepreneurs' III and Founders' III.
Arnold is a managing member of Polaris III, and may be
deemed to have shared power to vote these shares.

7 SOLE DISPOSITIVE POWER
0 shares.

8 SHARED DISPOSITIVE POWER
2,823,029 shares, of which 2,710,141 are directly
owned by PVP III, 70,242 are directly owned by
Entrepreneurs' III and 42,646 are directly owned by
Founders' III. Polaris III is the general partner of
PVP III, Entrepreneurs' III and Founders' III. Arnold
is a managing member of Polaris III, and may be
deemed to have shared power to dispose of these
shares.

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH
REPORTING PERSON 2,823,029

10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9)
EXCLUDES CERTAIN SHARES* []

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9 14.6%

12 TYPE OF REPORTING PERSON* IN

* SEE INSTRUCTIONS BEFORE FILLING OUT!

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1 NAME OF REPORTING
SS OR I.R.S. IDENTIFICATION NO. OF ABOVE PERSON
Alan G. Spoon ("Spoon")
Tax ID Number:

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) [] (b) [X]

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION
U.S. Citizen

5 SOLE VOTING POWER
0 shares.

NUMBER OF
SHARES 6 SHARED VOTING POWER
2,823,029 shares, of which 2,710,141 are directly
owned by PVP III, 70,242 are directly owned by
BENEFICIALLY OWNED BY EACH REPORTING PERSON
FOUNDERS' III. Polaris III is the general partner
of PVP III, Entrepreneurs' III and Founders' III.
Spoon is a managing member of Polaris III, and may be
deemed to have shared power to vote these shares.

7 SOLE DISPOSITIVE POWER
0 shares.

8 SHARED DISPOSITIVE POWER
2,823,029 shares, of which 2,710,141 are directly
owned by PVP III, 70,242 are directly owned by
Entrepreneurs' III and 42,646 are directly owned by
Founders' III. Polaris III is the general partner of
PVP III, Entrepreneurs' III and Founders' III. Spoon
is a managing member of Polaris III, and may be
deemed to have shared power to dispose of these
shares.

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH
REPORTING PERSON 2,823,029

10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9)
EXCLUDES CERTAIN SHARES* []

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9 14.6%

12 TYPE OF REPORTING PERSON* IN

* SEE INSTRUCTIONS BEFORE FILLING OUT!

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ITEM 1(A). NAME OF ISSUER

Alnylam Pharmaceuticals, Inc.

ITEM 1(B). ADDRESS OF ISSUER'S PRINCIPAL EXECUTIVE OFFICES

300 Third Street
Cambridge, Massachusetts 02142

ITEM 2(A). NAME OF PERSONS FILING

This Statement is filed by Polaris Venture Partners III, L.P., a Delaware limited partnership ("PVP III"), Polaris Venture Partners Entrepreneurs' Fund III, L.P., a Delaware limited partnership ("Entrepreneurs' III"), Polaris Venture Partners Founders' Fund III, L.P., a Delaware limited partnership ("Founders' III"), Polaris Venture Management Co. III, L.L.C., a Delaware limited liability company ("Polaris III"), Jonathan A. Flint ("Flint"), Terrance G. McGuire ("McGuire"), Stephen D. Arnold ("Arnold") and Alan G. Spoon ("Spoon"). Flint, McGuire, Arnold and Spoon are the managing members of Polaris III. The foregoing entities and individuals are collectively referred to as the "Reporting Persons."

Polaris III, the general partner of PVP III, Entrepreneurs' III and Founders' III, may be deemed to have sole power to vote and sole power to dispose of shares of the issuer directly owned by PVP III, Entrepreneurs' III and Founders' III. Flint, McGuire, Arnold and Spoon are the managing members of Polaris III and may be deemed to have shared power to vote and shared power to dispose of shares of the issuer directly owned by PVP III, Entrepreneurs' III and Founders' III.

ITEM 2(B). ADDRESS OF PRINCIPAL OFFICE

The address for each of the Reporting Persons is:

Polaris Venture Partners
1000 Winter Street, Suite 3350
Waltham, Massachusetts 02451

ITEM 2(C) CITIZENSHIP

PVP III, Entrepreneurs' III and Founders' III are Delaware limited partnerships; Polaris III is a Delaware Limited Liability Company; Flint, McGuire, Arnold and Spoon are United States citizens.

ITEM 2(D) AND (E). TITLE OF CLASS OF SECURITIES AND CUSIP NUMBER

Common Stock
CUSIP # 02043Q107

ITEM 3. Not Applicable

ITEM 4. OWNERSHIP

The following information with respect to the ownership of the Common Stock of the issuer by the persons filing this Statement is provided as of May 28, 2004:

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(a) Amount beneficially owned:

See Row 9 of cover page for each Reporting Person.

(b) Percent of Class:

See Row 11 of cover page for each Reporting Person.

(c) Number of shares as to which such person has:

(i) Sole power to vote or to direct the vote:

See Row 5 of cover page for each Reporting Person.

(ii) Shared power to vote or to direct the vote:

See Row 6 of cover page for each Reporting Person.

(iii) Sole power to dispose or to direct the disposition of:

See Row 7 of cover page for each Reporting Person.

(iv) Shared power to dispose or to direct the disposition of:

See Row 8 of cover page for each Reporting Person.

ITEM 5. OWNERSHIP OF FIVE PERCENT OR LESS OF A CLASS.

Not applicable.

ITEM 6. OWNERSHIP OF MORE THAN FIVE PERCENT ON BEHALF OF ANOTHER PERSON.

Under certain circumstances set forth in the limited partnership agreements of PVP III, Entrepreneurs' III and Founders' III, the general and limited partners of each of such entities may be deemed to have the right to receive dividends from, or the proceeds from, the sale of shares of the issuer owned by each such entity of which they are a partner.

ITEM 7. IDENTIFICATION AND CLASSIFICATION OF THE SUBSIDIARY WHICH ACQUIRED THE SECURITY BEING REPORTED ON BY THE PARENT HOLDING COMPANY

Not applicable.

ITEM 8. IDENTIFICATION AND CLASSIFICATION OF MEMBERS OF THE GROUP.

Not applicable.

ITEM 9. NOTICE OF DISSOLUTION OF GROUP.

Not applicable.

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ITEM 10. CERTIFICATION.

Not applicable.

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SIGNATURES

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Dated: June 4, 2004

POLARIS VENTURE PARTNERS III, L.P.,
a Delaware Limited Partnership

/s/ John J. Gannon

Signature

John J. Gannon
Authorized Signatory

POLARIS VENTURE PARTNERS
ENTREPRENEURS' FUND III, L.P.,
a Delaware Limited Partnership

/s/ John J. Gannon

Signature

John J. Gannon
Authorized Signatory

POLARIS VENTURE PARTNERS
FOUNDERS' FUND III, L.P.,
a Delaware Limited Partnership

/s/ John J. Gannon

Signature

POLARIS VENTURE
MANAGEMENT CO. III, L.L.C.,
a Delaware Limited Liability Company

John J. Gannon
Authorized Signatory

/s/ John J. Gannon

Signature

John J. Gannon
Authorized Signatory

/s/ John J. Gannon

Signature

John J. Gannon
Authorized Signatory

JONATHAN A. FLINT

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TERRANCE G. MCGUIRE

/s/ John J. Gannon

Signature

John J. Gannon
Authorized Signatory

STEPHEN D. ARNOLD

/s/ John J. Gannon

Signature

John J. Gannon
Authorized Signatory

ALAN G. SPOON

/s/ John J. Gannon

Signature

John J. Gannon
Authorized Signatory

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EXHIBIT INDEX

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EXHIBIT A

Agreement of Joint Filing

The undersigned hereby agree that a single Schedule 13G (or any amendment thereto) relating to the Common Stock of Alnylam Pharmaceuticals, Inc. shall be filed on behalf of each of the undersigned and that this Agreement shall be filed as an exhibit to such Schedule 13G.

Dated: June 4, 2004

POLARIS VENTURE PARTNERS III, L.P.,
a Delaware Limited Partnership

/s/ John J. Gannon

Signature

John J. Gannon
Authorized Signatory

POLARIS VENTURE PARTNERS
ENTREPRENEURS' FUND III, L.P.,
a Delaware Limited Partnership

/s/ John J. Gannon

Signature

John J. Gannon
Authorized Signatory

POLARIS VENTURE PARTNERS
FOUNDERS' FUND III, L.P.,
a Delaware Limited Partnership

/s/ John J. Gannon

Signature

John J. Gannon
Authorized Signatory

POLARIS VENTURE
MANAGEMENT CO. III, L.L.C.,
a Delaware Limited Liability Company

/s/ John J. Gannon

Signature

John J. Gannon
Authorized Signatory

JONATHAN A. FLINT

/s/ John J. Gannon

Signature

John J. Gannon
Authorized Signatory

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TERRANCE G. MCGUIRE

/s/ John J. Gannon

Signature

John J. Gannon
Authorized Signatory

STEPHEN D. ARNOLD

/s/ John J. Gannon

Signature

John J. Gannon
Authorized Signatory

ALAN G. SPOON

/s/ John J. Gannon

Signature

John J. Gannon
Authorized Signatory

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EXHIBIT B

REFERENCE TO JOHN J. GANNON AS AUTHORIZED SIGNATORY

John J. Gannon has signed the enclosed documents as Authorized Signatory. Note that copies of the applicable Agreement to File Jointly and Statement Appointing

Designated Filer And Authorized Signatory are already on file with the appropriate agencies.