ALNYLAM PHARMACEUTICALS, INC.
Form DEF 14A
April 25, 2008

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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
SCHEDULE 14A
(Rule 14a-101)
INFORMATION REQUIRED IN PROXY STATEMENT
SCHEDULE 14A INFORMATION
Proxy Statement Pursuant to Section 14(a) of the Securities Exchange Act of 1934

Filed by the Registrant þ
Filed by a Party other than the Registrant o
Check the appropriate box:

o Preliminary Proxy Statement

o Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2))

þ Definitive Proxy Statement

o Definitive Additional Materials

o Soliciting Material Pursuant to §240.14a-12

ALNYLAM PHARMACEUTICALS, INC.

(Name of Registrant as Specified in Its Charter)

(Name of Person(s) Filing Proxy Statement, if Other Than the Registrant)

Payment of Filing Fee (Check the appropriate box):

þ No fee required.

o Fee computed on table below per Exchange Act Rules 14a-6(i)(1) and 0-11.

(1) Title of each class of securities to which transaction applies:

(2) Aggregate number of securities to which transaction applies:

(3) Per unit price or other underlying value of transaction computed pursuant to Exchange Act Rule 0-11 (set forth the amount on which the filing fee is calculated and state how it was determined):

(4) Proposed maximum aggregate value of transaction:

(5) Total fee paid:

o Fee paid previously with preliminary materials: _____

o Check box if any part of the fee is offset as provided by Exchange Act Rule 0-11(a)(2) and identify the filing for which the offsetting fee was paid previously. Identify the previous filing by registration statement number, or the Form or Schedule and the date of its filing.

(1) Amount previously paid:

(2) Form, Schedule or Registration Statement No.:

(3) Filing Party:

(4) Date Filed:

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ALNYLAM PHARMACEUTICALS, INC.
300 THIRD STREET
CAMBRIDGE, MASSACHUSETTS 02142

NOTICE OF 2008 ANNUAL MEETING OF STOCKHOLDERS
To Be Held On June 3, 2008

To our Stockholders:

NOTICE IS HEREBY GIVEN that the Annual Meeting of Stockholders of Alnylam Pharmaceuticals, Inc. will be held on Tuesday, June 3, 2008 at 9:00 a.m., local time, at the offices of Alnylam Pharmaceuticals, Inc., 300 Third Street, Cambridge, Massachusetts. At the meeting, stockholders will consider and vote on the following matters:

1. The election of three (3) members to our board of directors to serve as Class I directors, each for a term of three years; and

2. The ratification of the appointment of PricewaterhouseCoopers LLP, an independent registered public accounting firm, as our independent auditors for the fiscal year ending December 31, 2008.

The stockholders will also act on any other business that may properly come before the annual meeting or any adjournment thereof.

Stockholders of record at the close of business on April 11, 2008 are entitled to notice of, and to vote at, the annual meeting or any adjournment thereof. Your vote is important regardless of the number of shares you own.

We encourage all stockholders to attend the annual meeting in person.

Whether or not you plan to attend the annual meeting in person, we hope you will take the time to vote your shares. If you are a stockholder of record, you may vote on the Internet, by telephone or by completing and mailing the enclosed proxy card in the envelope provided. If your shares are held in street name, that is, held for your account by a broker or other nominee, you will receive instructions from the holder of record that you must follow for your shares to be voted. If you attend the annual meeting, your proxy will, upon your written request, be returned to you and you may vote your shares in person.

By Order of the Board of Directors

John M. Maraganore, Ph.D.
Chief Executive Officer

Cambridge, Massachusetts
April 25, 2008

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ALNYLAM PHARMACEUTICALS, INC.
300 THIRD STREET
CAMBRIDGE, MASSACHUSETTS 02142

PROXY STATEMENT

for the 2008 Annual Meeting of Stockholders
to be held on June 3, 2008

This proxy statement and the enclosed proxy card are being furnished in connection with the solicitation of proxies by the board of directors of Alnylam Pharmaceuticals, Inc. for use at the Annual Meeting of Stockholders to be held on Tuesday, June 3, 2008 at 9:00 a.m., local time, at the offices of Alnylam Pharmaceuticals, Inc., 300 Third Street, Cambridge, Massachusetts, and at any adjournment thereof.

All proxies will be voted in accordance with the instructions contained in those proxies. If no choice is specified, the proxies will be voted in favor of the matters set forth in the accompanying Notice of Meeting.

Our Annual Report to Stockholders and our Annual Report on Form 10-K for the fiscal year ended December 31, 2007 are being mailed to stockholders with the mailing of these proxy materials on or about May 1, 2008.

Important Notice Regarding the Availability of Proxy Materials for the Annual Meeting of Stockholders to be Held on June 3, 2008:

This proxy statement and our 2007 Annual Report to Stockholders are available for viewing, printing and downloading at *www.alnylam.com/2008AnnualMeeting*.

A copy of our Annual Report on Form 10-K for the fiscal year ended December 31, 2007, as filed with the Securities and Exchange Commission, or SEC, will be furnished without charge to any stockholder upon written request to Alnylam Pharmaceuticals, Inc., 300 Third Street, Cambridge, Massachusetts 02142, Attention: Investor Relations and Corporate Communications. This proxy statement and our Annual Report on Form 10-K for the fiscal year ended December 31, 2007 are also available on the SEC s website at *www.sec.gov*.

IMPORTANT INFORMATION ABOUT THE ANNUAL MEETING AND VOTING

Q.	**Why did I receive these proxy materials?**	**A.**	We are providing these proxy materials to you in connection with the solicitation by our board of directors of proxies to be voted at our 2008 annual meeting of stockholders to be held at our offices at 300 Third Street, Cambridge, Massachusetts on Tuesday, June 3, 2008 at 9:00 a.m., local time. As a stockholder of Alnylam, you are invited to attend our annual meeting and are entitled and requested to vote on the proposals described in this proxy statement.
Q.		**A.**	

Who can vote at the annual meeting?	To be able to vote, you must have been a stockholder of record at the close of business on April 11, 2008, the record date for our annual meeting. The holders of the 40,816,447 shares of our common stock outstanding as of the record date are entitled to vote at the annual meeting. If you were a stockholder of record on that date, you are entitled to vote all of the shares that you held on that date at the annual meeting and at any postponements or adjournments thereof.

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Q. **What are the voting rights of the holders of common stock?**

A. Each outstanding share of our common stock will be entitled to one vote on each matter considered at the annual meeting.

Q. **How do I vote?**

A. **If your shares are registered directly in your name,** you may vote:

(1) **Over the Internet:** Go to the website of our tabulator, Computershare Trust Company, N.A., at *www.investorvote.com/ALNY*. Use the vote control number printed on your enclosed proxy card to access your account and vote your shares. You must specify how you want your shares voted or your Internet vote cannot be completed and you will receive an error message. Your shares will be voted according to your instructions. You must submit your Internet proxy before 11:59 p.m., Eastern Time, on June 2, 2008, the day before the annual meeting, for your proxy to be valid and your vote to count.

(2) **By Telephone:** Call 1-800-652-VOTE (8683), toll free from the United States, Canada and Puerto Rico, and follow the recorded instructions. You must specify how you want your shares voted and confirm your vote at the end of the call or your telephone vote cannot be completed. Your shares will be voted according to your instructions. You must submit your telephonic proxy before 11:59 p.m., Eastern Time, on June 2, 2008, the day before the annual meeting, for your proxy to be valid and your vote to count.

(3) **By Mail:** Complete and sign your enclosed proxy card and mail it in the enclosed postage prepaid envelope to Computershare. Computershare must receive the proxy card not later than June 2, 2008, the day before the annual meeting, for your proxy to be valid and your vote to count. Your shares will be voted according to your instructions. If you do not specify how you want your shares voted, they will be voted as recommended by our board.

(4) **In Person at the Meeting:** If you attend the annual meeting, you may deliver your completed proxy card in person or you may vote by completing a ballot, which we will provide to you at the meeting.

If your shares are held in street name, meaning they are held for your account by a broker or other nominee, you may vote:

(1) **Over the Internet or by Telephone:** You will receive instructions from your broker or other nominee if they permit Internet or telephone voting. You should follow those instructions.

(2) **By Mail:** You will receive instructions from your broker or other nominee explaining how you can vote your shares by mail. You should follow those instructions.

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(3) **In Person at the Meeting:** Contact your broker or other nominee who holds your shares to obtain a broker s proxy card and bring it with you to the annual meeting. A broker s proxy is *not* the form of proxy enclosed with this proxy statement. **You will not be able to vote shares you hold in street name in person at the annual meeting unless you have a proxy from your broker issued in your name giving you the right to vote your shares.**

Q. Can I change my vote?

A. **If your shares are registered directly in your name,** you may revoke your proxy and change your vote at any time before the annual meeting. To do so, you must do one of the following:

(1) Vote over the Internet or by telephone as instructed above. Only your latest Internet or telephone vote is counted.

(2) Sign a new proxy and submit it as instructed above. Only your latest dated proxy will be counted.

(3) Attend the annual meeting, request that your proxy be revoked and vote in person as instructed above. Attending the annual meeting will not revoke your Internet vote, telephone vote or proxy, as the case may be, unless you specifically request it.

If your shares are held in street name, you may submit new voting instructions by contacting your broker, bank or nominee. You may also vote in person at the annual meeting if you obtain a broker s proxy as described in the answer above.

Q. Will my shares be voted if I do not return my proxy?

A. **If your shares are registered directly in your name,** your shares will not be voted if you do not vote over the Internet, by telephone, by returning your proxy or by ballot at the annual meeting.

If your shares are held in street name, your brokerage firm may under certain circumstances vote your shares if you do not return your proxy. Brokerage firms can vote customers unvoted shares on routine matters. If you do not return a proxy to your brokerage firm to vote your shares, your brokerage firm may, on routine matters, either vote your shares or leave your shares unvoted. Your brokerage firm cannot vote your shares on any matter that is not considered routine.

Proposal 1, the election of directors, and Proposal 2, ratification of the selection of our independent auditors, are both considered routine matters. We encourage you to provide voting instructions to your brokerage firm by giving your proxy to them. This ensures that your shares will be voted at the annual meeting according to your instructions. You should receive directions from your brokerage firm about how to submit your proxy to them at the time you receive this proxy statement.

Q.	**How many shares must be present to hold the annual meeting?**	**A.**	A majority of our outstanding shares of common stock must be present to hold the annual meeting and conduct business. This is called a quorum. For purposes of determining whether a quorum exists, we count as present any shares that are voted over the Internet, by telephone, by completing and submitting a proxy or that are represented in person at the meeting. Further, for purposes of establishing a quorum, we will count as present shares that a stockholder holds even if the stockholder votes to abstain or only votes on one of the proposals. If a quorum is not present, we expect to adjourn the annual meeting until we obtain a quorum.

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Q. What vote is required to approve each matter and how are votes counted?

A. **Proposal 1 Election of three Class I Directors**

The three nominees for director to receive the highest number of votes FOR election will be elected as directors. This is called a plurality. Abstentions are not counted for purposes of electing directors. If your shares are held by your broker in street name, and you do not vote your shares, your brokerage firm may vote your unvoted shares on Proposal 1. You may:

vote FOR all nominees;

vote FOR one or more nominee(s) and WITHHOLD your vote from the other nominee(s); or

WITHHOLD your vote from all nominees.

Votes that are withheld will not be included in the vote tally for the election of directors and will not affect the results of the vote.

Proposal 2 Ratification of Appointment of Independent Auditors

To approve Proposal 2, stockholders holding a majority of the votes cast on the matter must vote FOR the proposal. If your shares are held by your broker in street name, and you do not vote your shares, your brokerage firm may vote your unvoted shares on Proposal 2. If you vote to ABSTAIN on Proposal 2, your shares will not be voted in favor of or against the proposal and will also not be counted as votes cast or shares voting on the proposal. As a result, voting to ABSTAIN will have no effect on the voting on the proposal.

Although stockholder approval of the appointment of PricewaterhouseCoopers LLP as our independent auditors is not required, we believe that it is advisable to give stockholders an opportunity to ratify this selection. If this proposal is not approved at the annual meeting, our audit committee will reconsider its appointment of PricewaterhouseCoopers LLP.

Q. Are there other matters to be voted on at the annual meeting?

A. We do not know of any matters that may come before the annual meeting other than the election of three Class I directors and the ratification of the appointment of our independent auditors. If any other matters are properly presented at the annual meeting, the persons named in the accompanying proxy intend to vote, or otherwise act, in accordance with their judgment on the matter.

Q. Where can I find the voting results?

A. We expect to report the voting results in our Quarterly Report on Form 10-Q for the second quarter ending June 30, 2008, which we anticipate filing with the SEC in August 2008.

Q. What are the costs of soliciting these proxies?

A. We will bear the cost of soliciting proxies. In addition to these proxy materials, our directors, officers and employees may solicit proxies by telephone, e-mail, facsimile and in person, without additional compensation. We have also retained The Altman Group to solicit proxies by mail, courier, telephone and facsimile and to request brokers, custodians and fiduciaries to forward proxy soliciting materials to the owners of stock

held in their names. For these services, we will pay a fee of $5,000, plus expenses. We may reimburse brokers or persons holding stock in their names, or in the names of their nominees, for their expenses in sending proxies and proxy material to beneficial owners.

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Q:	**How do I vote my 401(k) shares?**	**A.** You may give voting instructions for the number of shares of Alnylam common stock equal to the interest in Alnylam common stock credited to your 401(k) plan account as of the record date. To vote these shares, complete and return to Computershare the proxy card sent to you with this proxy statement. The 401(k) plan trustee will vote your shares according to your instructions. Only Computershare and its affiliates or agents will have access to your individual voting instructions. You may revoke previously given voting instructions by filing with the trustee either a written revocation or a properly completed and signed proxy bearing a later date.

Householding of Annual Meeting Materials

Some banks, brokers and other nominee record holders may be participating in the practice of householding proxy statements and annual reports. This means that only one copy of our proxy statement and annual report to stockholders may have been sent to multiple stockholders in your household. We will promptly deliver a separate copy of either document to you upon written or oral request to Alnylam Pharmaceuticals, Inc., 300 Third Street, Cambridge, Massachusetts 02142, Attention: Investor Relations and Corporate Communications, telephone: (617) 551-8200. If you want to receive separate copies of the proxy statement or annual report to stockholders in the future, or if you are receiving multiple copies and would like to receive only one copy per household, you should contact your bank, broker or other nominee record holder, or you may contact us at the above address and phone number.

OWNERSHIP OF OUR COMMON STOCK

The following table sets forth information regarding beneficial ownership of our common stock as of February 29, 2008 by:

- each person, or group of affiliated persons, known to us to be the beneficial owner of more than 5% of the outstanding shares of our common stock;
- each of our directors;
- our principal executive officer, our principal financial officer and our one other executive officer who served during the year ended December 31, 2007, whom, collectively, we refer to as our named executive officers; and
- all of our directors and executive officers as a group.

The number of shares of common stock beneficially owned by each person or entity is determined in accordance with the applicable rules of the SEC and includes voting or investment power with respect to shares of our common stock. The information is not necessarily indicative of beneficial ownership for any other purpose. Unless otherwise indicated, to our knowledge, all persons named in the table have sole voting and investment power with respect to their shares of common stock, except to the extent authority is shared by spouses under community property laws. The inclusion herein of any shares as beneficially owned does not constitute an admission of beneficial ownership.

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Name and Address of Beneficial Owner(1)	Number of Shares Owned	+	Common Stock Underlying Options Acquirable Within 60 Days(2)	=	Total Beneficial Ownership	Percentage of Common Stock Beneficially Owned(3)
Holders of more than 5% of our common stock						
FMR Corp.(4)	6,104,982				6,104,982	15.0%
Novartis Pharma AG(5)	5,267,865				5,267,865	12.9%
Aletheia Research and Management, Inc.(6)	2,748,469				2,748,469	6.7%
Directors and Named Executive Officers						
John K. Clarke	8,891		20,000		28,891	*
Victor J. Dzau, M.D			10,000		10,000	*
John M. Maraganore, Ph.D.	633(7)		927,563		928,196	2.2%
Vicki L. Sato, Ph.D.			16,667		16,667	*
Paul R. Schimmel, Ph.D.	296,473(8)				296,473	*
Edward M. Scolnick, M.D.(9)						*
Phillip A. Sharp, Ph.D.	289,472		108,750		398,222	*
Kevin P. Starr			92,631		92,631	*
James L. Vincent	10,000		60,001		70,001	*
Patricia L. Allen	1,433(7)		91,870		93,303	*
Barry E. Greene	5,043(7)		223,644		228,687	*
All directors and executive officers as a group (11 persons)	611,944		1,551,126		2,163,070	5.1%

* Less than 1% of our outstanding common stock.

(1) Unless otherwise indicated, the address of each stockholder is c/o Alnylam Pharmaceuticals, Inc., 300 Third Street, Cambridge, MA 02142.

(2) All stock options granted by us prior to the completion of our initial public offering include a right of early exercise, pursuant to which an optionee can exercise unvested stock options for shares of restricted stock. However, for purposes of this table, options that will not vest within 60 days after February 29, 2008 are not deemed exercisable or outstanding.

(3) Percentage of beneficial ownership is based on 40,802,423 shares of our common stock outstanding as of February 29, 2008. Shares of common stock subject to options currently exercisable, or exercisable within 60 days of February 29, 2008, are deemed outstanding for computing the percentage of the common stock beneficially owned by the person holding such options but are not deemed outstanding for computing the percentage ownership for any other person.

(4) According to Amendment No. 3 to a Schedule 13G filed by FMR LLC (previously known as FMR Corp.) with the SEC on February 13, 2008, as of December 31, 2007, Fidelity Management & Research Company, a wholly-owned subsidiary of FMR LLC, is the beneficial owner of 5,836,696 shares, as a result of acting as an investment advisor to various investment companies registered under Section 8 of the Investment Company Act of 1940. The ownership of one investment company, Fidelity Aggressive Growth Fund, amounted to 3,133,941 shares, or 7.7% of our outstanding common stock. Edward C. Johnson 3d, Chairman of FMR LLC, and FMR LLC, through its control of Fidelity Management & Research Company, and the funds each has sole power to dispose of the 5,836,696 shares owned by such funds. Neither FMR LLC nor Edward C. Johnson 3d has the sole power to vote or direct the voting of the shares owned directly by such funds, which power resides with the funds Boards of Trustees. Fidelity Management & Research Company carries out the voting of the shares under written guidelines established by the funds Boards of Trustees. Fidelity International Limited is the beneficial owner of 268,286 shares. Various persons have the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, the shares of our common stock held by these funds. The address of FMR LLC is 82 Devonshire Street, Boston, MA 02109.

(5) Novartis AG, as parent of Novartis Pharma AG, is the indirect beneficial owner of 5,267,865 shares. Our investor rights agreement with Novartis Pharma AG provides Novartis with the right to acquire additional

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equity securities of Alnylam in the event that we propose to sell or issue any equity securities, subject to specified exceptions, as described in the investor rights agreement, such that Novartis would be able generally to maintain its ownership percentage in Alnylam. In accordance with terms of the investor rights agreement, in connection with the issuance of shares of our common stock under our stock plans during 2007, Novartis has the right until May 2, 2008 to purchase from us up to 213,888 shares of our common stock at a purchase price of $25.29 per share. The information contained in the table above does not include the 213,888 shares that Novartis has the right to purchase under the investor rights agreement. The address of Novartis Pharma AG is Lichstrasse 35, 4053 Basel, Switzerland.

(6) According to Amendment No. 1 to a Schedule 13G filed by Aletheia Research and Management, Inc. with the SEC on February 14, 2008, as of December 31, 2007, Aletheia Research and Management, Inc. is an investment advisor registered under Section 203 of the Investment Advisors Act of 1940 and serves in such capacity for a number of managed accounts and funds. In its role as investment advisor or manager, Aletheia Research and Management, Inc. possesses investment and/or voting power over the shares of common stock reported as beneficially owned. Aletheia Research and Management, Inc. disclaims beneficial ownership of such shares of common stock. Various accounts and funds managed by Aletheia Research and Management, Inc. have the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, the shares of our common stock held in their respective accounts. The address of Aletheia Research and Management, Inc. is 100 Wilshire Boulevard, Suite 1960, Santa Monica, CA 90401.

(7) Includes shares contributed by Alnylam to our 401(k) plan for the benefit of the named executive officers as of February 29, 2008: Dr. Maraganore, 633 shares; Ms. Allen, 363 shares; and Mr. Greene, 492 shares.

(8) Includes shares held by the Paul Schimmel Prototype PSP, of which Paul Schimmel is trustee and over which he has sole investment and voting power.

(9) Dr. Scolnick was elected to our board of directors on February 11, 2008. Dr. Scolnick filled the vacancy created in 2007 upon the retirement of one of our directors.

Section 16(a) Beneficial Ownership Reporting Compliance

Section 16(a) of the Securities Exchange Act of 1934, or the Exchange Act, as amended, requires our directors, executive officers and the holders of more than 10% of our common stock to file with the SEC initial reports of ownership of our common stock and other equity securities on a Form 3 and reports of changes in such ownership on a Form 4 or Form 5. Officers, directors and 10% stockholders are required by SEC regulations to furnish us with copies of all Section 16(a) forms they file. Based solely on a review of our records and written representations by the persons required to file these reports, we believe that all filing requirements of Section 16(a) were satisfied with respect to our most recent fiscal year.

PROPOSAL 1 ELECTION OF CLASS I DIRECTORS

We have three classes of directors, currently consisting of three Class I directors, three Class II directors and three Class III directors. At each annual meeting, directors are elected for a term of three years to succeed those whose terms are expiring. The terms of the three classes are staggered so that only one class is elected by stockholders annually. John M. Maraganore, Ph.D., Paul R. Schimmel, Ph.D. and Phillip A. Sharp, Ph.D. are currently serving as Class I directors. Each of Drs. Maraganore, Schimmel and Sharp has served as a director since 2002. The Class I directors elected this year will serve as members of our board until the 2011 annual meeting of stockholders, or until their respective successors are elected and qualified.

The persons named in the enclosed proxy will vote to elect Drs. Maraganore, Schimmel and Sharp as Class I directors unless the proxy is marked otherwise. Drs. Maraganore, Schimmel and Sharp have indicated their willingness to serve on our board, if elected; however, if any nominee should be unable to serve, the person acting under the proxy may vote the proxy for a substitute nominee designated by our board. Our board has no reason to believe that Drs. Maraganore, Schimmel or Sharp would be unable to serve if elected.

Board Recommendation

The board of directors recommends a vote FOR the election of each of the Class I director nominees.

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Set forth below for each director, including the Class I director nominees, Drs. Maraganore, Schimmel and Sharp, is information as of February 29, 2008 with respect to his or her (a) name and age, (b) positions and offices at Alnylam, (c) principal occupation and business experience during at least the past five years, (d) directorships, if any, of other publicly held companies and (e) the year such person became a member of our board of directors. The duration of an individual s service on our board or as an officer described below includes service on the board of directors or as an officer of our predecessor company, which was also known as Alnylam Pharmaceuticals, Inc.

Name	Age	Director Since	Principal Occupation, Other Business Experience During the Past Five Years and Other Directorships
Class I directors, nominees to be elected at the annual meeting (terms expiring in 2011)			
John M. Maraganore, Ph.D.	45	2002	Dr. Maraganore has served as our Chief Executive Officer and as a member of our board of directors since December 2002. Dr. Maraganore also served as our President from December 2002 to December 2007. From April 2000 to December 2002, Dr. Maraganore served as Senior Vice President, Strategic Product Development for Millennium Pharmaceuticals, Inc. He also serves as a director of the Biotechnology Industry Organization.
Paul R. Schimmel, Ph.D.(3)	67	2002	Dr. Schimmel is a founder of Alnylam and has served as a member of our board of directors since June 2002. Dr. Schimmel has been the Ernest and Jean Hahn Professor of Molecular Biology and Chemistry and a member of the Skaggs Institute for Chemical Biology at the Scripps Research Institute since 1997. Dr. Schimmel is a member of the National Academy of Sciences, the Institute of Medicine and the American Academy of Arts and Sciences. Dr. Schimmel also serves as a director of Sirtris Pharmaceuticals, Inc.
Phillip A. Sharp, Ph.D.	63	2002	Dr. Sharp is a founder of Alnylam and has served as a member of our board of directors since June 2002. Dr. Sharp is currently an Institute Professor at the Massachusetts Institute of Technology and was the Founding Director of the McGovern Institute for Brain Research at the Massachusetts Institute of Technology. Dr. Sharp has been a professor at the Massachusetts Institute of Technology since 1974. He is a member of the National Academy of Sciences, the American Academy of Arts and Sciences, and the Institute of Medicine. Dr. Sharp received the Nobel Prize for Physiology or Medicine in 1993. He also serves as a director of Biogen Idec Inc., which he co-founded in 1978.

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Name	Age	Director Since	Principal Occupation, Other Business Experience During the Past Five Years and Other Directorships
Class II directors (terms expiring in 2009)			
John K. Clarke(2)(3)	54	2002	Mr. Clarke is a founder of Alnylam and has served as the chairman of our board of directors since June 2002. Since founding Cardinal Partners, a venture capital firm focused on healthcare, in 1997, Mr. Clarke has served as its Managing General Partner. Mr. Clarke also serves as a director of Momenta Pharmaceuticals, Inc. and Sirtris Pharmaceuticals, Inc.
Vicki L. Sato, Ph.D.(1)	59	2005	Dr. Sato has served as a member of our board of directors since December 2005. Dr. Sato currently is Professor of Management Practice at Harvard Business School and Professor of the Practice at Harvard University Department of Molecular and Cell Biology. Dr. Sato served as President of Vertex Pharmaceuticals Incorporated from December 2000 to February 2005. Prior to serving as Vertex s President, Dr. Sato served as its Chief Scientific Officer. Prior to joining Vertex, she held numerous positions at Biogen, Inc. (now Biogen Idec Inc.). She also serves as a director of Infinity Pharmaceuticals, Inc., PerkinElmer, Inc. and Bristol-Myers Squibb Co.
James L. Vincent(1)	68	2005	Mr. Vincent has served as a member of our board of directors since July 2005. Mr. Vincent was the Chairman of the Board and Chief Executive Officer of Biogen, Inc. (now Biogen Idec Inc.) from 1985 to 2002.
Class III directors (terms expiring in 2010)			
Victor J. Dzau, M.D.(2)	62	2007	Dr. Dzau has served as a member of our board of directors since April 2007. Dr. Dzau is currently the Chancellor for Health Affairs at Duke University and President and Chief Executive Officer of the Duke University Health System since July 2004. From July 1996 until September 2004, he was the Hersey Professor of Theory and Practice of Medicine at Harvard Medical School and Chair of the Department of Medicine, Physician in Chief and Director of Research at Brigham and Women s Hospital. He is a former Chairman of the National Institutes of Health (NIH) Cardiovascular Disease Advisory Committee and served on the Advisory Committee to the Director of the

NIH. He is a member of the Institute of Medicine. He also serves as a director of Duke University Health System, Medtronic, Inc., PepsiCo, Inc. and Genzyme Corporation.

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Name	Age	Director Since	Principal Occupation, Other Business Experience During the Past Five Years and Other Directorships
Edward M. Scolnick, M.D.	67	2008	Dr. Scolnick has served as a member of our board of directors since February 2008. Dr. Scolnick has served as the director of the Psychiatry Initiative at the Broad Institute since September 2004. From 1982 to 2003, Dr. Scolnick served in a number of key leadership roles at Merck Research Laboratories, most recently as president. Prior to joining Merck, he worked at the National Cancer Institute and the National Heart Institute. Dr. Scolnick is a member of the National Academy of Sciences, the American Academy of Arts and Sciences, and the Institute of Medicine. Dr. Scolnick served as a member of the Food and Drug Administration Science Board from 2000 to 2002 and also currently serves as a director of Millipore Corporation.
Kevin P. Starr(1)(3)	45	2003	Mr. Starr has served as a member of our board of directors since September 2003. Since April 2007, Mr. Starr has been a Partner of Third Rock Ventures, a venture capital firm, and since December 2002, he has been an entrepreneur. From December 2001 to December 2002, Mr. Starr served as Chief Operating Officer of Millennium Pharmaceuticals, Inc. He also served as Millennium s Chief Financial Officer from December 1998 to December 2002.

(1) Member of compensation committee.

(2) Member of nominating and corporate governance committee.

(3) Member of audit committee.

CORPORATE GOVERNANCE

General

We believe that good corporate governance is important to ensure that Alnylam is managed for the long-term benefit of our stockholders. This section describes key corporate governance practices that we have adopted.

We have adopted a Code of Business Conduct and Ethics which applies to all of our officers, directors and employees, as well as charters for our audit committee, our compensation committee and our nominating and corporate governance committee. We have posted copies of the Code of Business Conduct and Ethics and each committee s charter on the Corporate Governance section of our website, *www.alnylam.com*. We intend to disclose any amendments to, or waivers from, our Code of Business Conduct and Ethics on our website.

Corporate Governance Guidelines

Our board of directors has adopted corporate governance guidelines to assist in the exercise of its duties and responsibilities and to serve the best interests of Alnylam and our stockholders. These guidelines, which provide a framework for the conduct of our board of directors business, provide that:

- our board s principal responsibility is to oversee the management of Alnylam;
- a majority of the members of our board shall be independent directors;
- the independent directors meet regularly in executive session;

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directors have full and free access to management and, as necessary and appropriate, independent advisors; and

periodically, our board and its committees will seek to conduct a self-evaluation to determine whether they are functioning effectively.

Board Determination of Independence

Under The NASDAQ Stock Market Marketplace Rules, a director only will qualify as an independent director if, in the opinion of our board, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. Our board has determined that none of Drs. Dzau, Sato, Schimmel and Scolnick and Messrs. Clarke, Starr and Vincent has a relationship which would interfere with the exercise of independent judgment in carrying out the responsibilities of a director and that each of these directors is an independent director as defined under NASDAQ Rule 4200(a)(15).

Role of the Board

Our board of directors has responsibility for establishing broad corporate policies and reviewing our overall performance rather than day-to-day operations. The primary responsibility of our board is to oversee the management of our company and, in doing so, serve the best interests of the company and our stockholders. Our board selects, evaluates and provides for the succession of executive officers and, subject to stockholder election, directors. It reviews and approves corporate objectives and strategies, and evaluates significant policies and proposed major commitments of corporate resources. Our board also participates in decisions that have a potential major economic impact on our company. Management keeps our directors informed of company activity through regular communication, including written reports and presentations at board of directors and committee meetings.

Board of Directors Meetings and Attendance

Our board met seven times during 2007, either in person or by teleconference. During 2007, each of our directors attended at least 75% of the aggregate number of board meetings and meetings of the committees on which he or she then served.

Directors are expected to attend the annual meeting of stockholders. All members of our board attended the 2007 annual meeting of stockholders.

Board Committees

Our board of directors has established three standing committees audit, compensation and nominating and corporate governance each of which operates under a written charter that has been approved by our board. We have posted copies of each committee s charter on the Corporate Governance section of our website, *www.alnylam.com*. The members of each committee are appointed by our board, upon recommendation of our nominating and corporate governance committee.

Our board has determined that all of the members of each of its three standing committees are independent as defined under The NASDAQ Stock Market Marketplace rules, and, in the case of all members of our audit committee, the independence requirements of Rule 10A-3 under the Exchange Act.

Audit Committee

Our audit committee is responsible for:

- appointing, evaluating, retaining, approving the compensation of and, when necessary, terminating the engagement of our independent auditors;

- taking appropriate action, or recommending that our board of directors take appropriate action, to oversee the independence of our independent auditors;

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- reviewing and discussing with management and the independent auditors our annual and quarterly financial statements and related disclosures;

- monitoring our internal control over financial reporting, disclosure controls and procedures and code of business conduct and ethics;

- reviewing and discussing our risk management policies;

- establishing policies regarding hiring employees from our independent auditors and procedures for the receipt and retention of accounting related complaints and concerns;

- meeting independently with our internal auditing staff, our independent auditors and management; and

- preparing the audit committee report required by SEC rules, which is included beginning on page 14 of this proxy statement.

In addition, our audit committee must approve or ratify any related party transaction entered into by us. Our policies and procedures for the review and approval of related person transactions are summarized below under the heading Policies and Procedures For Related Person Transactions.

The members of our audit committee are Messrs. Starr (Chair) and Clarke and Dr. Schimmel. We believe that each member of our audit committee satisfies the requirements for membership, including independence, established by The NASDAQ Stock Market and the SEC.

Our board determined that Mr. Starr is an audit committee financial expert as defined in Item 407(d)(5) of Regulation S-K.

No member of our audit committee is the beneficial owner of more than 10% of our common stock.

Our audit committee met five times during 2007.

Compensation Committee

Our compensation committee is responsible for:

- annually reviewing and approving corporate goals and objectives relevant to compensation of our executive officers;

- reviewing and approving, or making recommendations to our board with respect to, the compensation of our chief executive officer and other executive officers;

- overseeing an evaluation of our senior executives;

- overseeing and administering our stock-based compensation plans and 401(k) plan, and performing the duties imposed on the compensation committee by the terms of those plans;

- reviewing and making recommendations to our board with respect to director compensation;

reviewing and amending as necessary our compensation philosophy and objectives;

reviewing and discussing annually with management our Compensation Discussion and Analysis, which is included beginning on page 17 of this proxy statement; and

preparing the compensation committee report required by SEC rules, which is included on page 24 of this proxy statement.

The processes and procedures followed by our compensation committee in considering and determining executive and director compensation are described below under the heading Compensation Discussion and Analysis.

The members of our compensation committee are Dr. Sato (Chair) and Messrs. Starr and Vincent. We believe that each member of our compensation committee satisfies the requirements for membership, including independence, as established by The NASDAQ Stock Market.

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Our compensation committee met eight times during 2007.

Nominating and Corporate Governance Committee

Our nominating and corporate governance committee is responsible for:

identifying individuals qualified to become members of our board;

recommending to our board the persons to be nominated for election as directors and the persons to be appointed to each of our board committees;

reviewing and making recommendations to our board with respect to management succession planning;

developing and recommending to our board a set of corporate governance principles; and

overseeing the evaluation of our board.

The processes and procedures followed by our nominating and corporate governance committee in identifying and evaluating director candidates are described below under the heading Director Nomination Process.

The members of our nominating and corporate governance committee are Mr. Clarke (Chair) and Dr. Dzau. We believe that each member of our nominating and corporate governance committee satisfies the requirements for membership, including independence, as established by The NASDAQ Stock Market.

Our nominating and corporate governance committee met three times during 2007.

Director Nomination Process

Our nominating and corporate governance committee is responsible for identifying individuals qualified to become directors, consistent with criteria approved by our board, and recommending the persons to be nominated for election as directors, except where we are legally required by contract, law or otherwise to provide third parties with the right to nominate.

The process followed by our nominating and corporate governance committee to identify and evaluate director candidates includes requests to board members and others for recommendations, meetings from time to time to evaluate biographical information and background material relating to potential candidates and interviews of selected candidates by members of the committee and our board.

In considering whether to recommend any particular candidate for inclusion in our board s slate of recommended director nominees, our nominating and corporate governance committee will apply certain criteria, including the candidate s integrity, business acumen, knowledge of our business and industry, experience, diligence, conflicts of interest and ability to act in the interests of all stockholders. The committee does not assign specific weights to particular criteria and no particular criterion is a prerequisite for each prospective nominee. We believe that the backgrounds and qualifications of our directors, considered as a group, should provide a composite mix of experience, knowledge and abilities that will allow our board to fulfill its responsibilities.

Stockholders may recommend individuals to our nominating and corporate governance committee for consideration as potential director candidates by submitting their names, together with appropriate biographical information and background materials and, if the stockholder is not a stockholder of record, a statement as to whether the stockholder

or group of stockholders making the recommendation has beneficially owned more than 5% of our common stock for at least a year as of the date such recommendation is made, to the nominating and corporate governance committee, c/o Corporate Secretary, Alnylam Pharmaceuticals, Inc., 300 Third Street, Cambridge, Massachusetts 02142. Assuming that appropriate biographical and background material has been provided on a timely basis, the committee will evaluate stockholder-recommended candidates by following substantially the same process, and applying substantially the same criteria, as it follows for candidates submitted by others. Stockholders also have the right under our bylaws to nominate director candidates directly, without any action or recommendation on the part of the committee or the board, by following the procedures set forth below under the heading Stockholder Proposals.

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At the annual meeting, stockholders will be asked to consider the election of Drs. Maraganore, Schimmel and Sharp, all of whom currently serve on our board of directors. Drs. Maraganore, Schimmel and Sharp were proposed to our board by our nominating and corporate governance committee and our board determined to include them as its nominees.

Communicating with the Independent Directors

Our board of directors will give appropriate attention to written communications that are submitted by stockholders, and will respond if and as appropriate. The chair of our board (if an independent director), the lead director (if one is appointed), or otherwise the chair of our nominating and corporate governance committee, is primarily responsible for monitoring communications from stockholders and for providing copies or summaries to the other directors as he or she considers appropriate.

Communications are forwarded to all directors if they relate to important substantive matters and include suggestions or comments that the chair of our board (if an independent director), or the lead director (if one is appointed), or otherwise the chair of our nominating and corporate governance committee, considers to be important for the directors to know. In general, communications relating to corporate governance and long-term corporate strategy are more likely to be forwarded than communications relating to ordinary business affairs, personal grievances and matters as to which we tend to receive repetitive communications.

Stockholders who wish to send communications on any topic to our board should address such communications to the Board of Directors, c/o Corporate Secretary, Alnylam Pharmaceuticals, Inc., 300 Third Street, Cambridge, Massachusetts 02142.

Report of the Audit Committee

Our audit committee reports to and acts on behalf of our board by providing oversight of our financial management, related person transaction policies and procedures, audits of our financial statements and financial reporting controls and accounting policies and procedures. Our management is responsible for the preparation, presentation and integrity of our financial statements and the independent registered public accounting firm is responsible for conducting an independent audit of our annual financial statements. Our audit committee is responsible for independently overseeing the conduct of these activities by our management and our independent registered public accounting firm.

Our audit committee operates under a written charter adopted by our board that reflects standards contained in The NASDAQ Stock Market Marketplace Rules. Our audit committee reviews its charter annually. A complete copy of the current audit committee charter is posted on the Corporate Governance section of our website, *www.alnylam.com*.

Our audit committee has reviewed our audited financial statements for the fiscal year ended December 31, 2007, and has discussed them with our management and our independent registered public accounting firm, PricewaterhouseCoopers LLP. Our audit committee has also discussed with PricewaterhouseCoopers LLP the matters required to be discussed by the Statement on Auditing Standards No. 61, *Communication with Audit Committees*, as amended, as adopted by the Public Company Accounting Oversight Board in Rule 3200T, which requires the independent registered public accounting firm to provide the audit committee with additional information regarding the scope and results of the audit, including the independent registered public accounting firm s responsibilities under generally accepted auditing standards, significant issues or disagreements concerning our accounting practices or financial statements, significant accounting policies, significant accounting adjustments, alternative accounting treatments, accounting for significant unusual transactions, and estimates, judgments and uncertainties.

In addition, PricewaterhouseCoopers LLP provided our audit committee with the written disclosures and the letter required by Independence Standards Board Standard No. 1 (Independence Discussions with Audit Committees), and our audit committee and PricewaterhouseCoopers LLP have discussed its independence from us and our management, including the matters in those written disclosures.

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In this context, our audit committee members meet regularly with PricewaterhouseCoopers LLP and our management (including private sessions with each of PricewaterhouseCoopers LLP and members of management) to discuss any matters that our audit committee or these individuals believe should be discussed. Our audit committee conducts a meeting each quarter to review the financial statements prior to the public release of earnings.

Based on its discussions with management and PricewaterhouseCoopers LLP, and its review of the representations and information provided by management and PricewaterhouseCoopers LLP, our audit committee recommended to our board that the audited financial statements be included in our Annual Report on Form 10-K for the year ended December 31, 2007. Our audit committee also recommended to our board, and our board has approved, subject to stockholder ratification, the selection of PricewaterhouseCoopers LLP as our independent auditors for the fiscal year ending December 31, 2008.

By the audit committee of the board of directors of Alnylam,

Kevin P. Starr, Chair
John K. Clarke
Paul R. Schimmel, Ph.D.

Principal Accountant Fees and Services

The following table summarizes the fees of our independent auditors, PricewaterhouseCoopers LLP, an independent registered public accounting firm, billed to us for each of the last two fiscal years for audit and other services:

Fee Category	**2007**	**2006**
Audit Fees(1)	$ 526,200	$ 580,560
Audit-Related Fees(2)	70,000	67,490
Tax Fees(3)	297,300	31,250
All Other Fees(4)	1,500	1,500
Total Fees	$ 895,000	$ 680,800

(1) Audit Fees consist of fees for the audit of our financial statements, the review of the interim financial statements included in our quarterly reports on Form 10-Q, services in connection with our public stock offerings and other professional services provided in connection with regulatory filings or engagements.

(2) Audit-Related Fees consist of fees for services related to accounting consultations and advice, including an audit of our government contracts, as well as consultations and advice relating to the adoption of Statement of Financial Accounting Standards No. 123R, *Share-Based Payment*, or SFAS 123R.

(3) Tax Fees consist of fees for tax compliance, tax consultations and tax studies. Tax studies include an analysis of our net operating loss carryforwards and research and development credits.

(4) All Other Fees represent payment for access to the PricewaterhouseCoopers LLP on-line accounting research database.

All such services were pre-approved by our audit committee in accordance with the pre-approval policies and procedures described below.

Pre-Approval Policies and Procedures

Our audit committee is required to pre-approve all audit services to be provided to us, whether provided by our principal independent auditors or other firms, and all other services to be provided to us by our independent auditors, except that de minimis non-audit services may be approved in accordance with applicable SEC rules.

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CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS

Policies and Procedures For Related Person Transactions

Our board has adopted written policies and procedures for the review of any transaction, arrangement or relationship in which Alnylam is a participant, the amount involved exceeds $120,000, and one of our executive officers, directors, director nominees or 5% stockholders (or their immediate family members), each of whom we refer to as a related person, has a direct or indirect material interest.

If a related person proposes to enter into such a transaction, arrangement or relationship, which we refer to as a related person transaction, the related person must report the proposed related person transaction to our president and chief operating officer. The policy calls for the proposed related person transaction to be reviewed and, if deemed appropriate, approved by our audit committee. Whenever practicable, the reporting, review and approval will occur prior to entry into the transaction. If advance review and approval is not practicable, our audit committee will review, and, in its discretion, may ratify the related person transaction. The policy also permits the chair of our audit committee to review and, if deemed appropriate, approve proposed related person transactions that arise between committee meetings, subject to ratification by our audit committee at its next meeting. Any related person transactions that are ongoing in nature will be reviewed annually.

A related person transaction reviewed under the policy will be considered approved or ratified if it is authorized by our audit committee after full disclosure of the related person s interest in the transaction. As appropriate for the circumstances, our audit committee will review and consider:

- the related person s interest in the related person transaction;
- the approximate dollar value of the amount involved in the related person transaction;
- the approximate dollar value of the amount of the related person s interest in the transaction without regard to the amount of any profit or loss;
- whether the transaction was undertaken in the ordinary course of our business;
- whether the terms of the transaction are no less favorable to us than terms that could have been reached with an unrelated third party;
- the purpose of, and the potential benefits to us of, the transaction; and
- any other information regarding the related person transaction or the related person in the context of the proposed transaction that would be material to investors in light of the circumstances of the particular transaction.

Our audit committee may approve or ratify the transaction only if the committee determines that, under all of the circumstances, the transaction is not inconsistent with our best interests. Our audit committee may impose any conditions on the related person transaction that it deems appropriate.

In addition to the transactions that are excluded by the instructions to the SEC s related person transaction disclosure rule, our board has determined that the following transactions do not create a material direct or indirect interest on

behalf of related persons and, therefore, are not related person transactions for purposes of this policy:

interests arising solely from the related person s position as an executive officer of another entity (whether or not the person is also a director of such entity), that is a participant in the transaction, where (a) the related person and all other related persons own in the aggregate less than a 10% equity interest in such entity, and (b) the related person and his or her immediate family members are not involved in the negotiation of the terms of the transaction and do not receive any special benefits as a result of the transaction; and

a transaction that is specifically contemplated by provisions of our charter or bylaws.

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The policy provides that transactions involving compensation of executive officers shall be reviewed and approved by our compensation committee in the manner specified in its charter.

Agreements with Novartis

Beginning in September 2005, we entered into the first of two strategic alliances with Novartis Pharma AG and its affiliate, Novartis Institutes for Biomedical Research, Inc., whom we refer to collectively as Novartis. At that time, we and Novartis executed a stock purchase agreement and an investor rights agreement, and ultimately executed a research collaboration and license agreement. As of March 31, 2008, Novartis owned approximately 13.0% of our common stock and pursuant to the terms of the investor rights agreement, Novartis has the right until May 2, 2008 to purchase up to an additional 213,888 shares of our common stock at a purchase price of $25.29 per share, which, if purchased, would cause Novartis to own approximately 13.4% of our common stock.

In February 2006, we entered into the Novartis flu alliance. During 2007, we and Novartis agreed to focus on additional pre-clinical research prior to advancing this program into development.

INFORMATION ABOUT EXECUTIVE OFFICER AND DIRECTOR COMPENSATION

Compensation Discussion and Analysis

Our compensation committee is responsible for overseeing the compensation of our senior management team, which includes our named executive officers and all of our vice presidents. In this capacity, our compensation committee designs, implements, reviews and approves all compensation for our chief executive officer and our other named executive officers. The goal of our compensation committee is to ensure that our compensation programs are aligned with our business goals and objectives and that the total compensation paid to each of our named executive officers is fair, reasonable and competitive.

Compensation Objectives and Philosophy

Our compensation programs are designed to attract and retain qualified and talented executives, motivating them to achieve our business goals and rewarding them for superior short- and long-term performance. In particular, our compensation programs are intended to reward the achievement of specified predetermined quantitative and qualitative goals and to align the interests of our senior management team with those of our stockholders in order to attain the ultimate objective of increasing stockholder value.

Elements of Total Compensation and Relationship to Performance

Key elements of our compensation programs include:

- base salary; and
- equity incentive compensation, typically in the form of stock options, the value of which depends on the performance of our common stock price, and which is subject to multi-year vesting that requires continued service.

Both base salary compensation and equity incentive compensation are designed to reward annual achievements as measured against pre-determined quantitative and qualitative individual and corporate performance goals and objectives, with consideration given to the officer s scope of responsibility, leadership abilities and effectiveness. We

do not currently award cash bonuses to our named executive officers or other members of our senior management team.

Determining and Setting Executive Compensation

We develop our compensation programs by utilizing publicly available compensation data and subscription survey data for a peer group of national and regional companies in the biopharmaceutical and biotechnology industries, which we believe are generally comparable to Alnylam in terms of organizational

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structure, size and stage of development, and against which we believe we compete for executive talent. This peer group of companies is reviewed and approved by our compensation committee annually. We believe that the compensation practices of this peer group provide us with appropriate compensation benchmarks. Notwithstanding the similarities of the peer group companies to Alnylam, due to the nature of our business, we compete for executive talent with many companies that are larger and better established than we are or that possess greater resources than we do, as well as with highly prestigious academic and non-profit institutions. Accordingly, our compensation committee generally targets base salaries between the 50th and 60th percentile of the range of salaries in our peer group and equity awards at or above the 75th percentile, resulting in total compensation for our executives between the 50th and 75th percentile of compensation paid to similarly situated executives of the companies in our peer group. Other considerations, including market factors and the experience level of an executive, may dictate variations to this general target.

As the biopharmaceutical industry is characterized by a very long product development cycle, including a lengthy research and development period and a rigorous approval phase involving human testing and governmental regulatory approval, many of the traditional benchmarking metrics, such as product sales, revenues and profits are inappropriate for an early-stage biopharmaceutical company, such as Alnylam. Instead, the specific factors our compensation committee considers when determining the compensation of our named executives include:

- key research and development achievements;
- clinical trial progress;
- achievement of regulatory milestones;
- establishment and maintenance of key strategic relationships;
- development of organizational capabilities; and
- financial and operating performance.

Our compensation committee has implemented an annual performance review program for our senior management team under which annual corporate and individual performance goals and objectives are determined and set forth in writing during the first quarter of each fiscal year. Our compensation committee then determines executive compensation after carefully reviewing overall corporate performance and performing a detailed evaluation of a named executive s annual performance against established corporate goals and individual objectives. In addition, our compensation committee applies its judgment, as it deems appropriate, in determining executive compensation.

Annual corporate goals are proposed by our senior management team and approved by our board. Individual objectives focus on contributions that facilitate the achievement of the corporate goals and are proposed by each member of senior management. Our compensation committee approves the individual objectives for our chief executive officer, our president and chief operating officer and each of our vice presidents. Increases in base salary, annual stock option awards and awards under our stock option bonus plan, if any, are tied to the achievement of these corporate and individual performance goals and objectives. Our compensation committee also establishes the size of the award under our stock option bonus plan to be granted to each member of senior management in the event that all company and individual goals are met or exceeded, and the maximum award under our stock option bonus plan to be granted in the aggregate. During the last quarter of each fiscal year, our senior management team evaluates our corporate performance and each officer s individual performance, as compared to the corporate and individual goals and objectives for that year. Based on this evaluation, our chief executive officer recommends to our compensation committee any increases in base salary, annual stock option awards and awards under our stock option bonus plan.

Our chief executive officer s individual performance evaluation is conducted by our compensation committee, which also determines whether to change his base salary, grant awards as part of our annual stock option grant to employees or grant awards under our stock option bonus plan. Stock option awards typically are granted at the last meeting of our board during the year. Any changes in base salary are effective at the beginning of the following year.

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Defining and Comparing Compensation to Market Benchmarks

Our compensation committee s goal is to determine an appropriate mix between cash payments and equity incentive awards to meet short- and long-term goals and objectives. With the exception of our annual stock option bonus plan, which we implemented in March 2007, we do not have any pre-established target for allocations or apportionment by type of compensation. The mix of compensation components is designed to reward recent results and drive long-term company performance.

We compare the total compensation of our senior management team to our industry peers. For 2007, our peer group consisted of biotechnology and biopharmaceutical companies in the 2007 Radford Global Life Sciences Survey, with a focus on companies with 50 to 149 employees. When evaluating the total compensation of our chief executive officer, we also considered a select group of companies included in the 2007 Radford Global Life Sciences Survey that were similar to Alnylam in terms of their number of employees, market capitalization, research and development expenditures and revenues. This select group included Cepheid, Human Genome Sciences, Inc., Infinity Pharmaceuticals, Inc., Isis Pharmaceuticals, Inc., Medarex, Inc., Momenta Pharmaceuticals, Inc., Myriad Genetics, Inc., Nastech Pharmaceutical Company, Inc., Regeneron Pharmaceuticals, Inc., Synta Pharmaceuticals Corp., XenoPort, Inc. and ZymoGenetics, Inc., among others. In addition, in 2007, we compared the total compensation of our president and chief operating officer to a separate select group of companies included in the 2007 Radford Global Life Sciences Survey with the position of chief operating officer. This select group included Alexion Pharmaceuticals Inc., Dyax Corp., Genomic Health, Inc., Maxygen, Inc., Neurogen Corporation, Rigel Pharmaceuticals, Inc., SuperGen, Inc. and XenoPort, Inc., among others. Our peer group is reviewed and approved by our compensation committee annually.

During 2007, our compensation committee engaged W.T. Haigh & Company, Inc. to assist in conducting a review of our executive compensation programs and, in particular, the compensation levels of our chief executive officer and our president and chief operating officer, as compared to those of our industry peers, and to interpret the results, make specific and overall recommendations and assist us in implementing any changes or additions to our compensation mix relative to those executive officers. Results of this analysis indicated that the cash compensation component for each of our chief executive officer and our president and chief operating officer was generally below comparative levels for similar positions within our peer group and equity-based compensation value and total compensation were positioned competitively. Our compensation committee reviewed the compensation of our vice president of finance and treasurer and our other officers against the compensation for similar positions of our industry peers.

Base Salary

We provide base salaries to our named executive officers to compensate them with a fair and competitive base level of compensation for services rendered during the year. Our compensation committee typically determines the base salary for each executive based on the executive s responsibilities, experience and, if applicable, the base salary level of the executive at his or her prior employment. In addition, our compensation committee reviews and considers the level of base salary paid by companies in our peer group for similar positions. Generally, we believe that executive base salaries should be targeted between the 50th and 60th percentile of the range of salaries in our peer group.

Merit-based increases in base salary for all of our executives, other than our chief executive officer, are determined by our compensation committee based upon a written summary of the executive s performance and a recommendation from our chief executive officer. A merit-based increase in base salary for our chief executive officer is based upon an assessment of his performance by our compensation committee, with input from the chairman of our board of directors and a review by our compensation committee of the base salary of chief executive officers in our peer group.

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Equity Awards

Our equity awards program is designed to:

reward demonstrated leadership and performance;

align our executive officers interests with those of our stockholders;

retain our executive officers through the term of the awards;

maintain competitive levels of compensation; and

motivate for outstanding future performance.

The market for qualified and talented executives in the biopharmaceutical industry is highly competitive and we compete for these personnel with many companies that have greater resources than we do. Accordingly, equity compensation is a crucial component of any competitive executive compensation package we may offer.

Our equity awards have taken the form of stock options. We typically grant stock options to each of our executive officers upon commencement of employment and annually in conjunction with our review of individual performance. We also grant stock options to our executive officers under our stock option bonus plan. All stock option grants to our executive officers are approved by our compensation committee and, other than grants to new hires, are typically granted at our compensation committee s regularly scheduled meeting at the end of the fiscal year. All stock options granted to our executives have exercise prices equal to the fair market value of our common stock on the date of grant, so that the recipient will not earn any compensation from his or her options unless our share price increases above the exercise price. In addition, the stock options granted typically vest over four years, which we believe provides an incentive to our executives to add value to the company over the long term and to remain with Alnylam.

Stock option grant levels vary among executive officers based on their positions and annual performance assessment, and, in the case of our chief executive officer and our president and chief operating officer, are determined partly based on peer group market data. In addition, our compensation committee reviews all components of the executive s compensation to ensure that an executive s total compensation conforms to our overall philosophy and objectives.

Typically, the stock options we grant to our executives have a ten-year term and vest as to 25% of the shares on the first anniversary of the grant date and as to an additional 6.25% of the shares at the end of each successive three-month period following the first anniversary of the grant date until the fourth anniversary of the grant date. Vesting ceases upon termination of employment and exercise rights cease three months following termination of employment, except in the case of death or disability. Prior to the exercise of an option, the holder does not have any rights as a stockholder with respect to the shares subject to such option, including voting rights and the right to receive dividends or dividend equivalents.

The number of stock options granted to our named executive officers, and the value of those grants determined in accordance with SFAS 123R, are shown below in the 2007 Grants of Plan-Based Awards Table on page 26.

We do not have any equity ownership guidelines for our executives.

Stock Option Bonus Plan

In March 2007, our compensation committee authorized the implementation of an executive stock option bonus plan for 2007, pursuant to which each of our vice presidents and executive officers was eligible to receive an annual bonus in the form of an award of stock options based upon the achievement of individual and corporate goals and objectives for 2007 that were approved by our compensation committee. The corporate goals for 2007 focused on advancing our RSV program into Phase II studies; advancing development programs to investigational new drug stage with the Food and Drug Administration; continuing to advance our delivery capabilities; funding the business with existing and new alliances; and building and

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developing the organization. In addition, under the 2007 executive stock option bonus plan, each participant was eligible to receive an additional award of stock options for individual performance as measured against his or her annual individual performance objectives. In December 2007, under this plan, our compensation committee reviewed individual and corporate performance, measured such performance against the goals and objectives, and awarded options to our senior management team to purchase an aggregate of 101,073 shares of our common stock, of which options to purchase an aggregate 47,245 shares were awarded to our named executive officers, at an exercise price equal to the fair market value of our common stock on the date of grant. Such stock options will vest in accordance with our typical four-year vesting schedule.

In March 2008, our compensation committee authorized the implementation of a similar executive stock option bonus plan for 2008, pursuant to which each of our vice presidents and executive officers is eligible to receive an annual bonus in the form of an award of stock options based upon the achievement of individual and corporate goals and objectives for 2008 that were approved by our compensation committee. The corporate goals for 2008 focus on: advancing our RSV program into Phase II studies in naturally infected patients; advancing development programs to investigational new drug stage with the Food and Drug Administration; continuing to advance our delivery capabilities; funding the business with existing and new strategic alliances, including ending the year with a specified minimum cash balance; and building and developing the organization in accordance with our investment plan. In addition, under the 2008 executive stock option incentive plan, each participant is eligible to receive an additional award of stock options for individual performance as measured against his or her annual individual performance objectives. Under this plan, the maximum stock option award for each executive officer is as follows: 40,000 shares for our chief executive officer, 25,000 shares for our president and chief operating officer, and 12,500 shares for our vice president of finance and treasurer.

Benefits and Other Compensation

Other compensation to our executives consists primarily of the broad-based benefits we provide to all employees, including health and dental insurance, life and disability insurance, an employee stock purchase plan and a 401(k) plan, except that executive officers are not eligible to participate in our employee stock purchase plan. Our 401(k) plan is a tax-qualified retirement savings plan pursuant to which all U.S. based employees, including executive officers, are able to contribute the lesser of up to 60% of their annual salary or the limit prescribed by the Internal Revenue Service on a before-tax basis. We match, in the form of shares of our common stock, 50% of the first 6% of a plan participant s pay that is contributed to the plan. Our contribution is made at the end of each quarter up to an annual maximum number of shares with a value of $5,250 for each participant. Our matching contributions become fully vested after the employee has been employed by us for two years.

Compensation for Our Named Executive Officers in 2007

Chief Executive Officer Compensation

In determining the 2007 compensation for our chief executive officer, John M. Maraganore, Ph.D., our compensation committee reviewed the performance of the company during 2007 and Dr. Maraganore s performance as compared to his individual corporate, financial, strategic and operational objectives for the year. In particular, in making its determination for the bonus award, our compensation committee determined that Dr. Maraganore successfully achieved most of his goals and objectives, including advancing our RSV program into Phase II studies; continuing to work on major delivery breakthroughs; funding the business with existing and new alliances; building and developing the organization; and leading our external interface with investors, academic and industry leaders. As a result of our compensation committee s review of the company s performance and of Dr. Maraganore s performance against his objectives, our compensation committee determined that Dr. Maraganore achieved 80% of the 2007 corporate and individual goals and objectives. Based on this determination, the results of the review conducted with W.T. Haigh &

Company indicating that Dr. Maraganore s cash compensation was generally well below the target percentile as compared to our peer group and the desire of our compensation committee to provide a competitive base salary for our chief executive officer between the 50th and 60th percentiles of our peer group, our

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compensation committee approved a 22% increase in Dr. Maraganore s annual base salary from $431,600 in 2007 to $525,000 in 2008. Dr. Maraganore s increased base salary is in the 58th percentile of the peer group described above. In addition, as a result of our compensation committee s determination regarding the company s and Dr. Maraganore s performance and its desire to provide an annual equity award above the 75th percentile of industry survey data, Dr. Maraganore received an annual option award to purchase 125,000 shares of common stock, and was awarded additional stock options to purchase 25,600 shares of common stock, which represented 80% of Dr. Maraganore s target grant under the executive stock option bonus plan for 2007.

Compensation of Other Named Executive Officers

In determining the 2007 compensation for our president and chief operating officer, Barry E. Greene, and our vice president of finance and treasurer, Patricia L. Allen, our compensation committee reviewed the performance of the company during 2007 and their individual performances as compared to their individual corporate, financial, strategic and operational objectives for the year.

The individual objectives for Mr. Greene involved meeting specified targets in the following areas: business development achievements; external alliance management and funding; pipeline development; organizational growth; operating performance; strategic planning; and external communications. Our compensation committee also considered Dr. Maraganore s recommendations with respect to Mr. Greene s performance. For the bonus award, our compensation committee determined that Mr. Greene successfully achieved several key objectives for the year, including: providing leadership, planning and executing key alliance management initiatives; driving business development accomplishments; achieving key pipeline objectives specific to our RSV program; building and developing the organization for long-term growth; and driving effective communication externally. In 2007, Mr. Greene was promoted to the additional office of president in recognition of his broader leadership responsibilities in business and product development. As a result of our compensation committee s review of the company s performance and of Mr. Greene s performance against his objectives, our compensation committee determined that Mr. Greene achieved 80% of the 2007 corporate and individual goals and objectives. Based on this determination, Mr. Greene s promotion to president and chief operating officer, the results of the review conducted with W.T. Haigh & Company indicating that Mr. Greene s cash compensation was generally below the target percentile as compared to our peer group and the desire of our compensation committee to provide a competitive base salary between the 50th and 60th percentiles of the peer group described above with respect to Mr. Greene, our compensation committee approved a 13% increase in Mr. Greene s annual base salary from $309,000 in 2007 to $350,000 in 2008. Mr. Greene s increased base salary is slightly above the 60th percentile of our peer group. In addition, as a result of our compensation committee s determination regarding the company s performance and Mr. Greene s performance against his objectives and its desire to provide an annual equity award above the 75th percentile of industry survey data, Mr. Greene received an annual option award to purchase 65,980 shares of common stock, and was awarded additional stock options to purchase 14,020 shares of common stock, which represented 80% of Mr. Greene s target grant under the executive stock option bonus plan for 2007.

The individual objectives for Ms. Allen involved meeting specified targets in the following areas: financial leadership in support of our company goals; long-range planning; external guidance; and overall financial management, including meeting specified minimum cash balance requirements at year-end. Our compensation committee also considered both Dr. Maraganore s and Mr. Greene s recommendations with respect to Ms. Allen s performance. For the bonus award, our compensation committee determined that Ms. Allen successfully achieved several key objectives for the year, including: meeting our goals for the year-end cash; providing financial leadership in support of our business development goals and assisting in securing funding for our business with new alliances; successfully completing long-term financing and investment planning objectives; and developing financial systems to support our research and development efforts. As a result of our compensation committee s review of the company s performance and of Ms. Allen s performance against her objectives, our compensation committee determined that Ms. Allen achieved 76%

of the 2007 corporate and individual goals and objectives. Based on this determination and the desire of our compensation committee to provide a competitive base salary between the 50th and 60th percentiles of our

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peer group, our compensation committee approved a 5% increase in Ms. Allen s annual base salary from $217,069 in 2007 to $227,830 in 2008. Ms. Allen s increased base salary is slightly above the 60th percentile of our peer group. In addition, as a result of our compensation committee s determination regarding the company s performance and Ms. Allen s performance against her objectives, Ms. Allen received an annual option award to purchase 25,000 shares of common stock, and was awarded additional stock options to purchase 7,625 shares of common stock, which represented approximately 76% of Ms. Allen s target grant under the executive stock option bonus plan for 2007.

Compensation for Our Named Executive Officers in 2008

In determining the 2008 compensation for our named executive officers, our compensation committee will review the performance of the company during 2008 and the individual performance of each individual named executive officer as compared to such named executive officer s individual corporate, financial, strategic and operational objectives for the year. In particular, in making its determination, our compensation committee will consider our success against the following corporate goals: advancing our RSV program into Phase II studies in naturally infected patients; advancing one development program to investigational new drug stage with the Food and Drug Administration; continuing to advance our deliver capabilities; funding the business with existing and new alliances, including ending the year with a specified minimum cash balance; and building and developing the organization in accordance with our plan. In addition, under the 2008 executive stock option bonus plan, each participant is eligible to receive an additional award of stock options for individual performance as measured against his or her annual individual performance objectives. Dr. Maraganore s individual objectives are heavily weighted toward achieving corporate goals, but also include specific targets with respect to executive recruitment, business development initiatives and managing external communications. Mr. Greene s objectives are also heavily weighted toward achieving corporate goals, but also include specific targets with respect to managing our various strategic alliances, advancing our intellectual property position, and managing our financial position. Ms. Allen s objectives focus on meeting specified financial goals, managing our financial position, providing support to our business development team and building a long-term financial plan.

Compliance with IRS Code Section 162(m)

Section 162(m) of the Internal Revenue Code of 1986, as amended, generally disallows a tax deduction to public companies for compensation in excess of $1.0 million paid to a company s chief executive officer and its other officers whose compensation is required to be disclosed to stockholders pursuant to the Exchange Act by reason of being among the Company s four other most highly compensated officers. Qualified performance-based compensation is not subject to the deduction limitation if specified requirements are met. We periodically review the potential effects of Section 162(m) and we consider whether to structure the performance-based portion of our executive compensation, to comply with exemptions in Section 162(m) so that the compensation remains tax deductible to us. However, our compensation committee may, in its judgment, authorize compensation payments that do not comply with the exemptions in Section 162(m) when it believes that such payments are appropriate to attract and retain executive talent and are in our best interest and that of our stockholders.

Stock Option Granting Practices

Delegation to Our Chief Executive Officer

Currently, all of our regular employees, including our named executive officers, are eligible to participate in our 2004 Stock Incentive Plan. All new employees are granted stock options when they start employment and all continuing employees are eligible for stock option grants on an annual basis based on performance and upon promotions to positions of greater responsibility. Our compensation committee has delegated to Dr. Maraganore, our chief executive officer, the authority to make stock option grants under our 2004 Stock Incentive Plan to new hires, other than vice presidents and executive officers. The number of stock options he may grant to any one individual must be within the

range specifically set by our board for these grants. The

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exercise price of such stock options must be equal to the closing price of our common stock on The NASDAQ Global Market on the date of grant.

With respect to stock option grants to new hires other than vice presidents, Dr. Maraganore approves the grant prior to the employee s first date of employment with such approval and provides that the award is to be granted to the new hire on his or her first date of regular employment, with a price equal to the closing price of the common stock as reported on The NASDAQ Global Market on the first date of regular employment. Dr. Maraganore is required to maintain a list of options granted pursuant to such delegated authority and report to our compensation committee regarding such grants.

Report of the Compensation Committee on Executive Compensation

Our compensation committee has reviewed and discussed the Compensation Discussion and Analysis required by Item 402(b) of Regulation S-K with management. Based upon such review and discussions, our compensation committee recommended to our board that such section be included in this proxy statement and incorporated by reference in our Annual Report on Form 10-K for the year ended December 31, 2007, which was filed with the SEC on March 10, 2008.

By the compensation committee of the board of directors of Alnylam,

Vicki L. Sato, Ph.D., Chair
Kevin P. Starr
James L. Vincent

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Executive Compensation

The following table sets forth the total compensation paid or accrued for the years ended December 31, 2007 and 2006 to our named executive officers.

Summary Compensation Table

Name	Year	Salary ($)	Bonus(2) ($)	Option Awards(3)(4) ($)	All Other Compensation(5) ($)	Total ($)
John M. Maraganore, Ph.D.(1)	2007	431,600		949,058	17,324	1,397,982
Chief Executive Officer	2006	415,000		951,008	20,886	1,386,894
Barry E. Greene(1)	2007	309,000		511,681	26,218	846,899
President and Chief Operating Officer	2006	300,000		567,164	24,827	891,991
Patricia L. Allen	2007	217,069		196,900	5,797	419,766
Vice President of Finance and Treasurer	2006	210,746		230,197	2,027	442,970

(1) On December 12, 2007, our board appointed Mr. Greene as our president and chief operating officer. Mr. Greene has served as our chief operating officer since he joined Alnylam in October 2003. On account of Mr. Greene s appointment, Dr. Maraganore no longer serves as our president. Dr. Maraganore continues to serve as our chief executive officer.

(2) We do not currently award cash bonuses to our named executive officers. In March 2007, our compensation committee authorized the implementation of an executive stock option bonus plan for 2007, pursuant to which each of our vice presidents and executive officers was eligible to receive an annual bonus in the form of an award of stock options based upon the achievement of individual and corporate goals for 2007 that were approved by our compensation committee. Bonus stock option awards made in 2007 under this plan are included in the amounts reported in the Option Awards column and detailed in footnote 1 to the 2007 Grants of Plan-Based Awards Table on page 26.

(3) We did not grant any restricted stock awards or stock appreciation rights to our named executive officers in 2007 or 2006.

(4) The amounts reported in the Option Awards column represent the compensation expense, without any reduction for risk of forfeiture, for financial reporting purposes for the fiscal years ended December 31, 2007 and 2006 of grants of options to each of the named executive officers, calculated in accordance with the provisions of SFAS 123R. The assumptions we used in calculating these amounts are included in Note 8 of our audited consolidated financial statements for the year ended December 31, 2007 included in our Annual Report on Form 10-K, filed with the SEC on March 10, 2008. To see the value of awards made to the named executive officers in 2007, see the 2007 Grants of Plan-Based Awards Table on page 26. To see the value actually received by the named executive officer in 2007, see the 2007 Option Exercises and Stock Vested Table on page 28.

Details of each of the grants reflected above can be found in the Outstanding Equity Awards at Fiscal Year-End for 2007 Table on page 27.

The amounts reported in the Summary Compensation Table for these option awards may not represent the amounts that the named executive officers will actually realize from the awards. Whether, and to what extent, a named executive officer realizes value will depend on our actual operating performance, stock price fluctuations and that named executive officer s continued employment.

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(5) The amounts reported in the All Other Compensation column reflect, for each named executive officer, the sum of (i) the incremental cost to us of all perquisites and other personal benefits; (ii) the amount we contributed to the 401(k) plan in respect of such executive officer; and (iii) the dollar value of life insurance premiums we paid. Specifically the All Other Compensation column above includes:

Name	Year	Term Life Insurance Premiums Paid by Alnylam ($)	Dollar Value of Alnylam Common Stock Contributed by Alnylam to the Executive s Account Under 401(k) Plan ($)	Incremental Cost to Alnylam of All Perquisites and Other Personal Benefits ($)
John M. Maraganore, Ph.D.	2007	600	5,250	11,474(a)
Chief Executive Officer	2006	540	4,844	15,502(a)
Barry E. Greene	2007	742	5,250	20,226(b)
President and Chief Operating Officer	2006	540	3,000	21,287(b)
Patricia L. Allen	2007	547	5,250	
Vice President of Finance and Treasurer	2006	446	1,581	

(a) Represents amounts for travel and related expenses, paid by Alnylam, including $3,643 in 2007 and $4,947 in 2006 as gross-ups for the related tax liability, for the executive s spouse to accompany the executive to certain industry events that spouses were expected to attend.

(b) Represents amounts for travel and related expenses, paid by Alnylam, including $6,799 in 2007 and $6,927 in 2006 as gross-ups for the related tax liability, for the executive s spouse to accompany the executive to certain industry events that spouses were expected to attend.

The following table sets forth information concerning each grant of an award made to a named executive officer during the fiscal year ended December 31, 2007 under any plan, contract, authorization or arrangement pursuant to which cash, securities, similar instruments or other property may be received:

2007 Grants of Plan-Based Awards

Name	Date of Grant(1)	Option Awards: Number of Securities Underlying Options	Exercise or Base Price of Option Awards ($)	Grant Date Fair Value of Option Awards ($)(2)

John M. Maraganore, Ph.D. *Chief Executive Officer*	12/12/07	150,600	31.39	2,885,647
Barry E. Greene *President and Chief Operating Officer*	12/12/07	80,000	31.39	1,532,880
Patricia L. Allen *Vice President of Finance and Treasurer*	12/12/07	32,625	31.39	625,128

(1) None of our named executive officers received restricted stock awards or stock appreciation rights in 2007. The option awards reported in the 2007 Grants of Plan-Based Awards Table were granted pursuant to our 2004 Stock Incentive Plan and include options to purchase 25,600, 14,020 and 7,625 shares of our common stock granted to Dr. Maraganore, Mr. Greene and Ms. Allen, respectively, in respect of our executive stock option bonus plan for 2007, which is described in the Compensation Discussion and Analysis under the heading Stock Option Bonus Plan on page 20. Our 2004 Stock Incentive Plan generally provides that the option exercise price may not be less than 100% of the fair market value of our common stock at the time the option is granted. Pursuant to the 2004 Stock Incentive Plan, these stock options vest as to 25% of the shares on the first anniversary of the grant date and as to an additional 6.25% of the shares at the end of each successive three-month period following the first anniversary of the grant date until the fourth anniversary of the grant date.

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(2) The Grant Date Fair Value, computed in accordance with SFAS 123R, represents the SFAS 123R value of options granted during the year.

The amounts reported in the Summary Compensation Table for these option awards reflect our accounting expense and may not represent the amounts our named executive officers will actually realize from the awards. Whether, and to what extent, a named executive officer realizes value will depend on our actual operating performance, stock price fluctuations and that named executive officer s continued employment.

Information Relating to Equity Awards and Holdings

The following table sets forth information concerning stock options that have not been exercised for each of our named executive officers outstanding at December 31, 2007.

Outstanding Equity Awards at Fiscal Year-End for 2007

	Option Awards			
Name	**Number of Securities Underlying Unexercised Options Exercisable**	**Number of Securities Underlying Unexercised Options Unexercisable**	**Option Exercise Price ($)**	**Option Expiration Date**
John M. Maraganore, Ph.D.	171,052(1)		0.475	02/26/2013
Chief Executive Officer	96,315(2)		0.475	02/26/2013
	69,078(3)	4,606(3)	0.95	01/06/2014
	105,263(4)		0.95	01/06/2014
	112,500(5)	37,500(5)	6.78	12/07/2014
	250,000(6)		7.47	12/21/2014
	62,500(7)	62,500(7)	13.12	12/07/2015
	31,250(8)	93,750(8)	22.75	12/14/2016
		150,600(9)	31.39	12/12/2017
Barry E. Greene	78,947(10)		0.95	11/06/2013
President and Chief	7,400(3)	494(3)	0.95	01/06/2014
Operating Officer	13,062(11)	1,866(11)	0.95	04/26/2014
	56,250(5)	18,750(5)	6.78	12/07/2014
	37,500(7)	37,500(7)	13.12	12/07/2015
	15,000(8)	45,000(8)	22.75	12/14/2016
		80,000(9)	31.39	12/12/2017
Patricia L. Allen	49,078(12)	9,869(12)	0.95	05/04/2014
Vice President of Finance	12,562(5)	4,188(5)	6.78	12/07/2014
and Treasurer	16,000(7)	16,000(7)	13.12	12/07/2015
	5,000(8)	15,000(8)	22.75	12/14/2016
		32,625(9)	31.39	12/12/2017

(1)

These options were granted on February 26, 2003. The options vested as to 25% of the shares on December 9, 2002, and as to an additional 6.25% at the end of each successive three-month period thereafter until December 9, 2006.

(2) These options were granted on February 26, 2003 and vested as to 50% of the shares upon us entering into our first significant strategic alliance, which occurred on September 8, 2003. The remaining 50% of these shares vest in equal installments on the last day of each quarterly period thereafter over four years.

(3) These options were granted on January 6, 2004. The options vested as to 25% of the shares on the first anniversary of the grant date and as to an additional 6.25% at the end of each successive three-month period following the first anniversary of the grant date until the fourth anniversary.

(4) These options were granted on January 6, 2004 and vested in full upon our initial public offering in May 2004.

(5) These options were granted on December 7, 2004. The options vest as to 25% of the shares on the first anniversary of the grant date and as to an additional 6.25% at the end of each successive three-month period following the first anniversary of the grant date until the fourth anniversary.

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(6) These options were granted on December 21, 2004 and, pursuant to the terms of the grant, vested in full upon the effective date of the Novartis research collaboration and license agreement, described above under Agreements with Novartis on page 17.

(7) These options were granted on December 7, 2005. The options vest as to 25% of the shares on the first anniversary of the grant date and as to an additional 6.25% at the end of each successive three-month period following the first anniversary of the grant date until the fourth anniversary.

(8) These options were granted on December 14, 2006. The options vest as to 25% of the shares on the first anniversary of the grant date and as to an additional 6.25% at the end of each successive three-month period following the first anniversary of the grant date until the fourth anniversary.

(9) These options were granted on December 12, 2007. The options vest as to 25% of the shares on the first anniversary of the grant date and as to an additional 6.25% at the end of each successive three-month period following the first anniversary of the grant date until the fourth anniversary.

(10) These options were granted on November 6, 2003. The options vest as to 25% of the shares on the first anniversary of the grant date and as to an additional 6.25% at the end of each successive three-month period following the first anniversary of the grant date until the fourth anniversary.

(11) These options were granted on April 26, 2004. The options vest as to 25% of the shares on the first anniversary of the grant date and as to an additional 6.25% at the end of each successive three-month period following the first anniversary of the grant date until the fourth anniversary.

(12) These options were granted on May 4, 2004. The options vest as to 25% of the shares on the first anniversary of the grant date and as to an additional 6.25% at the end of each successive three-month period following the first anniversary of the grant date until the fourth anniversary.

The following table sets forth information concerning the exercise of stock options during 2007 for each of our named executive officers.

2007 Option Exercises and Stock Vested

	Option Awards	
Name	**Number of Shares Acquired on Exercise(1)**	**Value Realized on Exercise ($)**
John M. Maraganore, Ph.D. *Chief Executive Officer*	75,000	1,149,128
Barry E. Greene *President and Chief Operating Officer*	20,000	616,000
Patricia L. Allen		

Vice President of Finance
and Treasurer

(1) The value realized on exercise is based on the sales price of the shares less the applicable option exercise price.

Potential Payments Upon Termination or Change-in-Control

We do not have agreements with any of our executive officers or employees pursuant to which they are eligible for potential payments upon termination or change in control of Alnylam.

Employment Arrangements

Each executive officer has signed a nondisclosure, invention and non-competition agreement providing for the protection of our confidential information and ownership of intellectual property developed by such

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executive officer and a covenant not to compete with us for a period of eighteen months after termination of employment.

Securities Authorized for Issuance Under Equity Compensation Plans

The following table provides information as of December 31, 2007 about the securities authorized for issuance under our equity compensation plans, consisting of our 2002 Employee, Director and Consultant Stock Option Plan, our 2003 Employee, Director and Consultant Stock Option Plan, our 2004 Stock Incentive Plan and our 2004 Employee Stock Purchase Plan. All of our equity compensation plans were adopted with the approval of our stockholders.

Equity Compensation Plan Information

	Number of Securities to Be Issued Upon Exercise of Outstanding Options, Warrants and Rights	Weighted-Average Exercise Price of Outstanding Options, Warrants and Rights ($)	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans(1)
Equity compensation plans approved by stockholders	5,304,021	17.18	788,061
Equity compensation plans not approved by stockholders			
Total	5,304,021	17.18	788,061

(1) Consists of 594,857 shares of our common stock available for future issuance under our 2004 Stock Incentive Plan and 193,744 shares of our common stock available for future issuance under our 2004 Employee Stock Purchase Plan. No shares of our common stock were available for issuance under our 2002 Employee, Director and Consultant Stock Option Plan or our 2003 Employee, Director and Consultant Stock Option Plan as of December 31, 2007. On January 1, 2008, in accordance with the provisions of the 2004 Stock Incentive Plan, the number of shares available for issuance under the 2004 Stock Incentive Plan was automatically increased by 2,038,648 shares.

Compensation of Directors

We compensate our non-employee directors for their service as directors. We do not pay directors who are also our employees any additional compensation for their service as a director. Accordingly, Dr. Maraganore does not receive any additional compensation for his service as a director.

Our compensation committee periodically reviews the compensation we pay our non-employee directors. Our compensation committee compares our board compensation to compensation paid to non-employee directors of similarly sized public companies at a similar stage of development in the biotechnology industry. Our compensation committee also considers the responsibilities we ask of our board members along with the amount of time required to perform those responsibilities.

Each non-employee director is eligible to receive a cash fee of $20,000 per year and the chairs of our board, our compensation committee and our nominating and corporate governance committee are entitled to receive an additional $5,000 per year. The chair of our audit committee is entitled to receive an additional $15,000 per year. Each non-employee director is also entitled to receive upon his or her initial election to our board a stock option grant for 30,000 shares of common stock, vesting annually over three years, and an additional stock option grant to purchase 15,000 shares of common stock at each year s annual meeting at which he or she served as a director, vesting in full on the first anniversary of the date of grant. In addition, the chair of our audit committee is entitled to an additional stock option grant to purchase 10,000 shares of common stock per year. Our board may, in its discretion, increase or decrease the size of the award made to a director upon election or in connection with the annual stock option grant or make other stock option grants to

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our directors. The exercise price of these stock options is the fair market value of our common stock on the date of grant.

We also reimburse our directors for reasonable travel and other related expenses incurred in connection with their service on our board.

The following table sets forth information concerning the compensation of our non-employee directors in 2007.

Director Compensation

Name	Fees Earned or Paid in Cash ($)	Option Awards ($)(2)(3)(4)	All Other Compensation ($)	Total ($)
Peter Barrett, Ph.D.(1)	12,500	47,654		60,154
John K. Clarke	30,000	135,565		165,565
Victor J. Dzau, M.D.(5)	15,000	82,869		97,869
Vicki L. Sato, Ph.D.(6)	22,500	140,148		162,648
Paul R. Schimmel, Ph.D.	20,000	135,565		155,565
Edward M. Scolnick, M.D.(7)				
Phillip A. Sharp, Ph.D.	20,000	135,565	895,620(8)	1,051,185
Kevin P. Starr	35,000	259,703(9)		294,703
James L. Vincent	20,000	187,527		207,527

(1) Dr. Barrett retired from our board on June 1, 2007 prior to our 2007 annual meeting. Following his retirement from our board, Dr. Barrett exercised his outstanding options to purchase 20,000 shares of common stock and sold those shares at an average price of $22.98 per share.

(2) The amounts in this column include the compensation expense for financial statement reporting purposes for the fiscal year ended December 31, 2007, in accordance with SFAS 123R of stock options granted under our equity plans for service on our board and treated for accounting purposes as employee grants, and may include amounts from stock options granted in and prior to 2007. There can be no assurance that the SFAS 123R amounts will ever be realized. The assumptions we used to calculate these amounts are included in Note 8 to our audited consolidated financial statements for the fiscal year ended December 31, 2007 included in our Annual Report on Form 10-K, filed with the SEC on March 10, 2008. See footnote 8 below for the compensation expense of a stock options granted under our equity plans for service on our board, but not accounted for under SFAS 123R.

(3) As of December 31, 2007, our non-employee directors held the following aggregate number of shares under outstanding stock options (representing unexercised option awards both exercisable and unexercisable):

Name	Number of Shares Underlying Outstanding Stock Options for Board Service	Number of Shares Underlying Outstanding Stock Options for Non-Board Service

John K. Clarke	35,000	
Victor J. Dzau, M.D.	30,000	
Vicki L. Sato, Ph.D.	40,000	
Paul R. Schimmel, Ph.D.	15,000	
Edward M. Scolnick, M.D.		
Phillip A. Sharp, Ph.D.	35,000	160,000
Kevin P. Starr	117,631	
James L. Vincent	100,000	

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(4) The number of shares underlying stock options granted to our non-employee directors for their service on our board during 2007 and the grant date fair value of such stock options are as follows:

Name	Date of Grant	Number of Shares Underlying Stock Option Grants in 2007	Grant Date Fair Value of Stock Option Grants in 2007 $(a)
John K. Clarke	06/01/2007	15,000	151,059
Victor J. Dzau, M.D.	04/02/2007(b)	30,000(b)	332,691
Vicki L. Sato, Ph.D.	06/01/2007	15,000	151,059
Paul R. Schimmel, Ph.D	06/01/2007	15,000	151,059
Edward M. Scolnick, M.D.			
Phillip A. Sharp, Ph.D.	06/01/2007	15,000	151,059
Kevin P. Starr	06/01/2007	25,000	251,765
James L. Vincent	06/01/2007	15,000	151,059

(a) The Grant Date Fair Value computed in accordance with SFAS 123R represents the SFAS 123R value of options granted during 2007. The weighted-average grant date fair value per option was $10.07, with the exception of the grant to Dr. Dzau, for which the grant date fair value per option was $11.09. There can be no assurance that the Grant Date Fair Value computed in accordance with SFAS 123R will ever be realized.

(b) Dr. Dzau received a stock option grant in connection with his election to our board in April 2007 but was not eligible to receive an annual stock option grant in June 2007.

(5) Dr. Dzau was elected to our board in April 2007.

(6) Dr. Sato was appointed chair of our compensation committee in April 2007.

(7) Dr. Scolnick was elected to our board in February 2008. In connection with his election to our board, Dr. Scolnick received a stock option grant for 45,000 shares of common stock in February 2008. In granting this option, our board exercised its discretion in determining the amount of the award.

(8) This amount relates to compensation to Dr. Sharp for service on our scientific advisory board and includes (A) a cash payment of $36,000 paid to Dr. Sharp during 2007 and (B) the compensation expense for financial statement reporting purposes for stock options granted to him in 2003, 2005, 2006 and 2007 for an aggregate of 196,862 shares. Because these stock options were compensation for service on our scientific advisory board, they are non-employee grants and, therefore, are accounted for using the fair value method in accordance with SFAS No. 123, as amended, and Emerging Issues Task Force Issues No. 96-18 *Accounting for Equity Instruments that are Issued to Other than Employees for Acquiring, or in Conjunction with, Selling, Goods or Services*, or EITF 96-18, under which compensation is generally recognized over the vesting period of the award. Under the fair value method, compensation associated with non-employee stock-based awards is determined based on the estimated fair value of the award, measured using an established option-pricing model. At the end of each financial reporting period prior to vesting, the value of these options (as calculated using the Black-Scholes option pricing model) are re-measured using the then current fair value of our common stock. The assumptions we used to calculate this amount is included in Note 8 to our audited consolidated financial

statements for the fiscal year ended December 31, 2007 included in our Annual Report on Form 10-K, filed with the SEC on March 10, 2008.

(9) This amount includes the compensation expense for financial statement reporting purposes for the fiscal year ended December 31, 2007 for a stock option for 52,631 shares granted to Mr. Starr for service on our board of directors in 2003, which grant was deemed to be a non-employee grant for accounting purposes and, therefore, is accounted for at its fair value in accordance with SFAS No. 123 and EITF 96-18. See footnote 8 for a description of the fair value method of determining compensation expense.

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Compensation Committee Interlocks and Insider Participation

During fiscal year 2007, the members of our compensation committee were Dr. Sato and Messrs. Starr and Vincent, none of whom was a current or former officer or employee of Alnylam and none of whom had any related person transaction involving Alnylam.

PROPOSAL 2 RATIFICATION OF APPOINTMENT OF INDEPENDENT AUDITORS

Board Recommendation

Our board of directors recommends a vote FOR the ratification of the appointment of PricewaterhouseCoopers LLP as our independent auditors for the fiscal year ending December 31, 2008.

Our board has appointed the firm of PricewaterhouseCoopers LLP, an independent registered public accounting firm, as independent auditors for the fiscal year ending December 31, 2008. Although stockholder approval of our board s appointment of PricewaterhouseCoopers LLP is not required by law, our board believes that it is advisable to give stockholders an opportunity to ratify this appointment. If this proposal is not approved at the annual meeting, our board will reconsider its appointment of PricewaterhouseCoopers LLP. Representatives of PricewaterhouseCoopers LLP are expected to be present at the annual meeting and will have the opportunity to make a statement, if they desire to do so, and will be available to respond to appropriate questions from our stockholders.

OTHER MATTERS

Our board of directors does not know of any other matters which may come before the meeting. However, if any other matters are properly presented to the meeting, it is the intention of the persons named in the accompanying proxy card to vote, or otherwise act, in accordance with their judgment on those matters.

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STOCKHOLDER PROPOSALS

In order to be included in proxy material for the 2009 annual meeting of stockholders, stockholders proposals must be received by us at our principal executive offices, 300 Third Street, Cambridge, Massachusetts 02142 no later than January 1, 2009. We suggest that proponents submit their proposals by certified mail, return receipt requested, addressed to our Corporate Secretary.

In addition, our bylaws require that we be given advance notice of stockholder nominations for election to our board of directors and of other matters which stockholders wish to present for action at an annual meeting of stockholders, other than matters included in our proxy statement. The required notice must be in writing and received by our corporate secretary at our principal offices not later than March 5, 2009 (90 days prior to the first anniversary of our 2008 Annual Meeting of Stockholders) and not before February 3, 2009 (120 days prior to the first anniversary of our 2008 Annual Meeting of Stockholders). However, if the 2009 annual meeting of stockholders is advanced by more than 20 days, or delayed by more than 60 days, from the first anniversary of the 2008 Annual Meeting of Stockholders, notice must be received not earlier than the 120th day prior to such annual meeting and not later than the close of business on the later of (1) the 90th day prior to such annual meeting and (2) the 10th day following the date on which notice of the date of such annual meeting was mailed or public disclosure of the date of such annual meeting was made, whichever occurs first. Our bylaws also specify requirements relating to the content of the notice which stockholders must provide, including a stockholder nomination for election to our board of directors, to be properly presented at the 2009 annual meeting of stockholders.

By Order of the Board of Directors

John M. Maraganore, Ph.D.
Chief Executive Officer

Cambridge, Massachusetts
April 25, 2008

OUR BOARD OF DIRECTORS ENCOURAGES STOCKHOLDERS TO ATTEND THE ANNUAL MEETING. WHETHER OR NOT YOU PLAN TO ATTEND IN PERSON, YOU ARE URGED TO VOTE BY PROXY OVER THE INTERNET, BY TELEPHONE OR BY MAIL AS DESCRIBED IN THE ENCLOSED PROXY CARD. A PROMPT RESPONSE WILL GREATLY FACILITATE ARRANGEMENTS FOR THE ANNUAL MEETING AND YOUR COOPERATION WILL BE APPRECIATED. STOCKHOLDERS WHO ATTEND THE ANNUAL MEETING MAY VOTE THEIR STOCK PERSONALLY EVEN THOUGH THEY HAVE SUBMITTED A PROXY PREVIOUSLY.

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Appendix A

C123456789

MR A SAMPLE DESIGNATION (IF ANY) ADD 1 ADD 2 ADD 3 ADD 4 ADD 5 ADD 6

Using a **black ink** pen, mark your votes with an X as shown in this example. Please do not write outside the designated areas.

DQQQQM

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Electronic Voting Instructions

You can vote by Internet or telephone! Available 24 hours a day, 7 days a week!

Instead of mailing your proxy, you may choose one of the two voting methods outlined below to vote your proxy.

VALIDATION DETAILS ARE LOCATED BELOW IN THE TITLE BAR.

Proxies submitted by the Internet or telephone must be received by 11:59 p.m., Eastern Time, on June 2, 2008.

Vote by Internet

· Log on to the Internet and go to

www.investorvote.com/ALNY

· Follow the steps outlined on the secured website.

Vote by telephone

· Call toll free 1-800-652-VOTE (8683) within the United States, Canada & Puerto Rico any time on a touch tone
telephone. There is **NO CHARGE** to you for the call.

· Follow the instructions provided by the recorded message.

Annual Meeting Proxy Card 123456 C0123456789 12345

IF YOU HAVE NOT VOTED VIA THE INTERNET OR TELEPHONE, FOLD ALONG THE PERFORATION, DETACH AND RETURN THE BOTTOM PORTION IN THE ENCLOSED ENVELOPE.

A Proposals The Board of Directors recommends a vote FOR the listed nominees to serve for a term ending in 2011 and FOR Proposal 2.

1. To elect the following nominees as Class I directors of Alnylam:

		For Withhold	For Withhold	For Withhold
01	John M. Maraganore, Ph.D.	[ ]	[ ]	[ ]
02	Paul R. Schimmel, Ph.D.	[ ]	[ ]	[ ]
03	**Phillip A. Sharp, Ph.D.**	[ ]	[ ]	[ ]

For	Against	Abstain
[ ]	[ ]	[ ]

2. To ratify the appointment of PricewaterhouseCoopers LLP, an independent registered public accounting firm, as Alnylam s independent auditors for the fiscal year ending December 31, 2008.

B Non-Voting Items

Change of Address Please print new address below.

Comments Please print your comments below.

C Authorized Signatures This section must be completed for your vote to be counted. Date and Sign Below

Please sign exactly as your name(s) appear(s) hereon. All holders must sign. When signing as attorney, executor, administrator or other fiduciary, please give your full titleassuch. Joint owners should each sign personally. If a corporation, please sign in full corporate name, by authorized officer. If a partnership, please sign in partnership name by authorized person.

Date (mm/dd/yyyy) Please print date below. Signature 1 Please keep signature within the box.

Signature 2 Please keep signature within the box.

C 1234567890 JNT

1 U P X 0 1 7 6 6 8 1

MR A SAMPLE (THIS AREA IS SET UP TO ACCOMMODATE 140 CHARACTERS) MR A SAMPLE AND MR A SAMPLE AND MR A SAMPLE AND MR A SAMPLE AND MR A SAMPLE AND MR A SAMPLE AND MR A SAMPLE AND MR A SAMPLE AND

<STOCK#> 00W62C

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IF YOU HAVE NOT VOTED VIA THE INTERNET OR TELEPHONE, FOLD ALONG THE PERFORATION, DETACH AND RETURN THE BOTTOM PORTION IN THE ENCLOSED ENVELOPE.

Alnylam PHARMACEUTICALS (LOGO)

Proxy -ALNYLAM PHARMACEUTICALS, INC.

ANNUAL MEETING OF STOCKHOLDERS

To be held on June 3, 2008 at 9:00 a.m., Eastern Time

This Proxy is solicited on behalf of the Board of Directors of Alnylam Pharmaceuticals, Inc. (Alnylam).

The undersigned, having received notice of the annual meeting of stockholders and the proxy statement therefor and revoking all prior proxies, hereby appoints each of John M. Maraganore, Ph.D., Barry E. Greene and Patricia L. Allen (each with full power of substitution), as proxies of the undersigned, to attend the annual meeting of stockholders of Alnylam to be held at 9:00 a.m., Eastern Time, on Tuesday, June 3,2008, at the offices of Alnylam, 300 Third Street, Cambridge, Massachusetts 02142, and any adjourned or postponed session thereof, and there to vote and act as indicated upon the matters on the reverse side in respect of all shares of common stock which the undersigned would be entitled to vote or act upon, with all powers the undersigned would possess if personally present.

You can revoke your proxy at any time before it is voted at the annual meeting by (i) submitting another properly completed proxy bearing a later date; (ii) giving written notice of revocation to the Secretary of Alnylam; (iii) if you submitted a proxy through the Internet or by telephone, by submitting a proxy again through the Internet or by telephone prior to the close of the Internet voting facility or the telephone voting facility; or (iv) voting in person at the annual meeting. If the undersigned hold(s) any of the shares of common stock in a fiduciary, custodial or joint capacity or capacities, this proxy is signed by the undersigned in every such capacity as well as individually.

The shares of common stock of Alnylam represented by this proxy will be voted as directed by the undersigned for the proposals herein proposed by Alnylam. If no direction is given with respect to any proposal specified herein, this proxy will be voted FOR the proposal. In their discretion, the proxies are authorized to vote upon any other business that may properly come before the annual meeting or any adjournment thereof.

Please vote, date and sign on reverse side and return promptly in the enclosed pre-paid envelope.

Your vote is important. Please vote immediately.

CONTINUED AND TO BE SIGNED ON REVERSE SIDE SEE REVERSE SIDE