

SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

AMENDMENT NO. 4
TO
FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933
AASTROM BIOSCIENCES, INC.
(EXACT NAME OF REGISTRANT AS SPECIFIED IN ITS CHARTER)

MICHIGAN

2834

94-3096597

(STATE OR OTHER JURISDICTION OF
INCORPORATION OR ORGANIZATION)

(PRIMARY STANDARD INDUSTRIAL
CLASSIFICATION CODE NUMBER)

(IRS EMPLOYER
IDENTIFICATION NO.)

24 FRANK LLOYD WRIGHT DRIVE
P.O. BOX 376
ANN ARBOR, MICHIGAN 48106
(313) 930-5555
(ADDRESS, INCLUDING ZIP CODE, AND TELEPHONE NUMBER, INCLUDING AREA CODE, OF
REGISTRANT'S PRINCIPAL EXECUTIVE OFFICES)

R. DOUGLAS ARMSTRONG, PH.D.
PRESIDENT AND CHIEF EXECUTIVE OFFICER
AASTROM BIOSCIENCES, INC.
24 FRANK LLOYD WRIGHT DRIVE
P.O. BOX 376
ANN ARBOR, MICHIGAN 48106
(313) 930-5555
(NAME, ADDRESS, INCLUDING ZIP CODE, AND TELEPHONE NUMBER, INCLUDING AREA CODE,
OF AGENT FOR SERVICE)

COPIES TO:

T. KNOX BELL, ESQ.
DOUGLAS J. REIN, ESQ.
DAVID R. YOUNG, ESQ.
GRAY CARY WARE & FREIDENRICH
A PROFESSIONAL CORPORATION
4365 EXECUTIVE DRIVE, SUITE 1600
SAN DIEGO, CALIFORNIA 92121
(619) 677-1400

RICHARD R. PLUMRIDGE, ESQ.
BROBECK PHLEGER & HARRISON LLP
1633 BROADWAY
NEW YORK, NEW YORK 10019
(212) 581-1600

APPROXIMATE DATE OF COMMENCEMENT OF PROPOSED SALE TO THE PUBLIC: As soon as
practicable after this Registration Statement becomes effective.

If any of the securities being registered on this Form are to be offered on
a delayed or continuous basis pursuant to Rule 415 under the Securities Act of
1933, check the following box. [X]

If this Form is to be filed to register additional securities for an
offering pursuant to Rule 462(b) under the Securities Act, check the following
box and list the Securities Act registration statement number of earlier
effective registration statement for the same offering. [] _____

If this Form is a post-effective amendment filed pursuant to Rule 462(c)
under the Securities Act, check the following box and list the Securities Act
registration statement number of the earlier effective registration statement
for the same offering. [] _____

If this form is a post-effective amendment filed pursuant to Rule 462(d)
under the Securities Act, check the following box and list the Securities Act
registration statement number of the earlier effective registration statement
for the same offering. [] _____

If delivery of the prospectus is expected to be made pursuant to Rule 434,
please check the following box. []

THE REGISTRANT HEREBY AMENDS THIS REGISTRATION STATEMENT ON SUCH DATE OR DATES AS MAY BE NECESSARY TO DELAY ITS EFFECTIVE DATE UNTIL THE REGISTRANT SHALL FILE A FURTHER AMENDMENT WHICH SPECIFICALLY STATES THAT THIS REGISTRATION STATEMENT SHALL THEREAFTER BECOME EFFECTIVE IN ACCORDANCE WITH SECTION 8(a) OF THE SECURITIES ACT OF 1933 OR UNTIL THE REGISTRATION STATEMENT SHALL BECOME EFFECTIVE ON SUCH DATE AS THE COMMISSION ACTING PURSUANT TO SAID SECTION 8(a), MAY DETERMINE.

EXPLANATORY NOTE

This Amendment No. 4 to this Registration Statement is being filed solely for the purpose of filing an exhibit to the Registration Statement.

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

ITEM 13. OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION

Other expenses in connection with the registration of the securities hereunder, which will be paid by the Registrant, will be substantially as follows:

ITEM	AMOUNT
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Securities and Exchange Commission registration fee.....	\$ 3,819
NASD filing fee.....	1,760
Nasdaq National Market fee.....	17,500
Blue sky qualification fees and expenses*.....	5,000
Accounting fees and expenses*.....	25,000
Legal fees and expenses*.....	100,000
Printing and engraving expenses*.....	100,000
Transfer agent and registrar fees*.....	5,000
Escrow agent fees*.....	10,000
Miscellaneous expenses*.....	81,921

Total*.....	\$350,000
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* Estimated expenses.

ITEM 14. INDEMNIFICATION OF DIRECTORS AND OFFICERS

Sections 1561 through 1565 of the Michigan Business Corporation Act (the "MBCA") authorize a corporation to grant or a court to award indemnity to directors, officers, employees and agents in terms sufficiently broad to permit such indemnification under certain circumstances for liabilities (including reimbursement for expenses incurred) arising under the Securities Act of 1933, as amended (the "Securities Act").

The Bylaws of the Registrant (see Exhibit 3.2), provide that the Registrant shall, to the fullest extent authorized or permitted by the MBCA, or other applicable law, indemnify a director or officer who was or is a party or is threatened to be made a party to any proceeding by or in the right of the Registrant to procure a judgment in its favor by reason of the fact that such person is or was a director, officer, employee or agent of the Registrant, against expenses, including actual and reasonable attorneys' fees, and amounts paid in settlement incurred in connection with the action or suit, if the indemnitee acted in good faith and in a manner the person reasonably believed to be in, or not opposed to, the best interests of the Registrant or its shareholders. This section also authorizes the Registrant to advance expenses incurred by any agent of the Registrant in defending any proceeding prior to the final disposition of such proceeding upon receipt of an undertaking by or on behalf of the agent to repay such amount unless it shall be determined ultimately that the agent is entitled to be indemnified.

The Bylaws also authorize the Registrant to purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the Registrant against any liability asserted against or incurred by such person in such capacity or arising out of such person's status as such, regardless of whether the Registrant would have the power to indemnify such person against such liability under the provisions of the MBCA.

The Registrant has entered into an indemnification agreement with certain of its directors, officers and other key personnel, which contains provisions that may in some respects be broader than the specific indemnification provisions contained under applicable law. The indemnification agreement may require the Registrant, among other things, to indemnify such directors, officers and key personnel against certain liabilities that may arise by reason of their status or service as directors, officers or employees of the Registrant, to advance the expenses incurred by such parties as a result of any threatened claims or proceedings brought against them as to which they could be indemnified and, to the maximum extent that insurance coverage of such directors, officers and key employees under the Registrant's directors' and officers' liability insurance policies is maintained.

Section 1209 of the MBCA permits a Michigan corporation to include in its Articles of Incorporation a provision eliminating or limiting a director's liability to a corporation or its shareholders for monetary damages for breaches of fiduciary duty. The enabling statute provides, however, that liability for breaches of the duty of loyalty, acts or omissions not in good faith or involving intentional misconduct or knowing violation of the law, or the receipt of improper personal benefits cannot be eliminated or limited in this manner. The Registrant's Restated Articles of Incorporation include a provision which eliminates, to the fullest extent permitted by the MBCA, director liability for monetary damages for breaches of fiduciary duty.

Section 7 of the Placement Agent Agreement filed as Exhibit 1.1 hereto sets forth certain provisions with respect to the indemnification of certain controlling persons, directors and officers against certain losses and liabilities, including certain liabilities under the Securities Act.

ITEM 15. RECENT SALES OF UNREGISTERED SECURITIES

(a) ISSUANCES OF COMMON STOCK

Since October 1, 1994, the Registrant has sold the following unregistered shares of Common Stock:

In October 1995, the Registrant issued and sold 37,500 shares of Common Stock to Albert B. Deisseroth at a price of \$0.80 per share.

(b) ISSUANCES OF PREFERRED STOCK

Since October 1, 1994, the Registrant has sold the following unregistered shares of preferred stock:

In April and May 1995, the Registrant issued an aggregate of 2,500,001 shares of Series D Preferred Stock to 11 accredited investors at a price of \$4.00 per share.

In December 1995, the Registrant issued 62,500 shares of Series D Preferred Stock to Northwest Ohio Venture Fund, L.P., at a purchase price of \$4.00 per share.

In January 1996, the Registrant issued an aggregate of 1,411,765 shares of Series E Preferred Stock to SBIC Partners, L.P., and the State Treasurer of the State of Michigan ("Michigan") at a purchase price of \$4.25 per share.

Pursuant to a Governance Agreement between the Company and Rhone-Poulenc Rorer, Inc. ("RPR"), dated September 15, 1995, RPR terminated its contractual relationship with the Registrant on September 6, 1996. As a result of such termination, the Registrant issued 205,882 shares of Series E Preferred Stock to RPR at a purchase price of \$17.00 per share.

(c) ISSUANCES OF WARRANTS

Since October 1, 1994, the Registrant has issued the following unregistered warrants:

In October 1996, the Registrant issued warrants to Michigan to purchase 69,444 shares of Common Stock as consideration for entering into the Convertible Loan Commitment.

In October 1997, the Registrant entered into an agreement with Burrill & Company, pursuant to which the Registrant issued warrants to purchase 200,000 shares of Common Stock as consideration for certain services to be rendered by Burrill & Company under such agreement.

(d) OPTION ISSUANCES TO, AND EXERCISES BY, EMPLOYEES, DIRECTORS AND CONSULTANTS

From January 18, 1990 to April 11, 1997, the Registrant issued options to purchase a total of 2,719,231 shares of Common Stock at exercise prices ranging from \$0.15 to \$7.125 per share to 99 employees and consultants and six non-employee directors. From October 30, 1992 to April 11, 1997, the Registrant issued a total of 1,434,534 shares of Common Stock to 31 employees and consultants and one non-employee director upon exercise of stock options at exercise prices ranging from \$0.15 to \$1.20 per share.

There were no underwriters employed in connection with any of the transactions set forth in Item 15.

The issuances described in Items 15(a), 15(b) and 15(c) were exempt from registration under the Securities Act in reliance on Section 4(2) of the Securities Act as transactions by an issuer not involving a public offering. The issuances described in item 15(d) were exempt from registration under the Securities Act in reliance on Rule 701 promulgated thereunder as transactions pursuant to compensatory benefit plans and contracts relating to compensation. The recipients of securities in each such transaction represented their intention to acquire the securities for investment only and not with a view to or for sale in connection with any distribution thereof and appropriate legends were affixed to the share certificates or other instruments issued in such transactions.

ITEM 16. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) Exhibits

See Exhibit Index.

(b) Financial Statement Schedules

All such schedules have been omitted because they are not applicable or not required under the instructions contained in Regulation S-X or because the information is included elsewhere in the Financial Statements or the notes thereto.

ITEM 17. UNDERTAKINGS

The undersigned Registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement;

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or material change to such information in the registration statement;

(2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) If the Registrant is a foreign private issuer, to file a post-effective amendment to the registration statement to include any financial statements required by Rule 3-19 of Regulation S-X at the start of any delayed offering or throughout a continuous offering. Financial statements and information otherwise required by Section 10(a)(3) of the Act need not be furnished, provided that the Registrant includes in the prospectus, by means of a post-effective amendment, financial statements required pursuant to this paragraph and other information necessary to ensure that all other information in the prospectus is at least as current as the date of those financial statements. Notwithstanding the foregoing, with respect to registration statements on Form F-3, a post-effective amendment need not be filed to include financial statements and information required by Section 10(a)(3) of the

Securities Act or Rule 3-19 of Regulation S-X if such financial statements and information are contained in periodic reports filed with or furnished to the Commission by the Registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the Form F-3.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant, pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

The undersigned Registrant undertakes that:

(1) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 4340A and contained in a form of prospectus filed by the Registrant pursuant to Rule 424(b)(1) of (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective; and

(2) For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Ann Arbor, State of Michigan, on the 25th day of November, 1997.

AASTROM BIOSCIENCES, INC.

By: /s/ R. Douglas Armstrong

 R. DOUGLAS ARMSTRONG, PH.D.
 PRESIDENT AND CHIEF EXECUTIVE
 OFFICER
 (PRINCIPAL EXECUTIVE OFFICER)

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

SIGNATURES	TITLE	DATE
/s/ R. Douglas Armstrong ----- R. DOUGLAS ARMSTRONG, PH.D	President, Chief Executive Officer, and Director (Principal Executive Officer)	November 25, 1997
Todd E. Simpson* ----- TODD E. SIMPSON	Vice President, Finance & Administration, Secretary and Treasurer, Chief Financial Officer (Principal Financial and Accounting Officer)	November 25, 1997
Robert J. Kunze* ----- ROBERT J. KUNZE	Chairman of the Board and Director	November 25, 1997
Stephen G. Emerson* ----- STEPHEN G. EMERSON, M.D., PH.D	Director	November 25, 1997
G. Bradford Jones* ----- G. BRADFORD JONES	Director	November 25, 1997
Horst R. Witzel* ----- HORST R. WITZEL, DR. -ING	Director	November 25, 1997
Edward C. Wood, Jr.* ----- EDWARD C. WOOD, JR.	Director	November 25, 1997

*By: /s/ R. Douglas Armstrong

 R. DOUGLAS ARMSTRONG, PH.D.
 ATTORNEY-IN-FACT

CONSENT OF INDEPENDENT ACCOUNTANTS

We hereby consent to the use in the Prospectus constituting part of this Registration Statement on Form S-1 of our report dated August 15, 1997, relating to the financial statements of Aastrom Biosciences, Inc., which appears in such Prospectus. We also consent to the reference to us under the heading "Experts" in such Prospectus.

PRICE WATERHOUSE LLP

Detroit, Michigan
November 18, 1997

EXHIBIT INDEX

EXHIBIT NUMBER	DESCRIPTION OF DOCUMENT
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1.1****	Form of Placement Agent Agreement between Cowen & Company and the Company.
3.1*	Restated Articles of Incorporation of the Company.
3.2**	Bylaws, as amended.
3.3	Certificate of Designation of 5 1/2% Convertible Preferred Stock.
4.1**	Specimen Common Stock Certificate.
4.2**	Amended and Restated Investors' Rights Agreement, dated April 7, 1992.
4.3****	Amendment to Amended and Restated Investor's Rights Agreement, dated April 22, 1997.
4.4****	Specimen 5 1/2% Convertible Preferred Stock Certificate.
5.1****	Opinion of Pepper, Hamilton & Scheetz.
10.1**	Form of Indemnification Agreement.
10.2**	Amended and Restated 1992 Incentive and Non-Qualified Stock Option Plan and forms of agreements thereunder.
10.3**	1996 Outside Directors Stock Option Plan and forms of agreements thereunder.
10.4**	1996 Employee Stock Purchase Plan and form of agreement thereunder.
10.5**	Stock Purchase Agreement, dated October 22, 1993, between Cobe Laboratories, Inc. and the Company and amendment thereto dated October 29, 1996.
10.6**+	Distribution Agreement, dated October 22, 1993, between Cobe BCT, Inc. and the Company and amendments thereto dated March 29, 1995, September 11, 1995 and October 29, 1996.
10.7**	Lease Agreement, dated May 18, 1992, between Domino's Farms Holdings, L.P. and the Company and amendments thereto dated February 26, 1993, October 3, 1994, November 16, 1994 and July 29, 1996.
10.8**	Promissory Note, dated November 18, 1993, for \$120,000 loan by the Company to R. Douglas Armstrong, Ph.D. and amendment thereto dated October 30, 1996.
10.9**	Promissory Note, dated October 20, 1993, for \$47,303 loan by the Company to Stephen G. Emerson, M.D., Ph.D. and amendment thereto dated October 30, 1996.
10.10**	Clinical Trial Agreement dated August 28, 1996 between the Company and Loyola University Medical Center Cancer Center.
10.11**	Stock Purchase Commitment Agreement, dated October 15, 1996, between the State Treasurer of the State of Michigan and the Company.
10.12**	Convertible Loan Commitment Agreement, dated October 15, 1996, between the State Treasurer of the State of Michigan and the Company.
10.13**	Letter Agreement, dated November 11, 1996, between the Company and Cobe Laboratories, Inc.
10.14**	Termination Agreement, dated November 14, 1996, between the Company and Rhone-Poulenc Rorer Inc.
10.15**	Stock Purchase Agreement, dated November 14, 1996, between the Company and Rhone-Poulenc Rorer Inc.
10.16**	Collaborative Supply Agreement, dated December 16, 1996, between the Company and Anchor Advanced Products, Inc. Mid-State Plastics Division.
10.17**	1989 Stock Option Plan and form of agreement thereunder.
10.18**	Ancillary Stock Option Plan and form of agreement thereunder.
10.19**	401(k) Plan.
10.20**	Form of Employment Agreement.
10.21**	License Agreement, dated July 17, 1992, between J.G. Cremonese and the Company and related addenda thereto dated July 14, 1992 and July 7, 1993.

- 10.22*** Collaborative Product Development Agreement, dated May 10, 1994, between SeaMED Corporation and the Company.
- 10.23*** Collaborative Product Development Agreement, dated November 8, 1994, between Ethox Corporation and the Company.
- 10.24*** License and Supply Agreement, dated April 1, 1996, between Immunex Corporation and the Company.
- 10.25** Clinical Trial Agreement, dated April 19, 1996, between the Company and the University of Texas M.D. Anderson Cancer Center.
- 10.26** License Agreement, dated March 13, 1992, between the Company and the University of Michigan and amendments thereto dated March 13, 1992, October 8, 1993 and June 21, 1995.
- 10.27** Employee Proprietary Information and Invention Agreement, effective June 1, 1991, between the Company and R. Douglas Armstrong, Ph.D.
- 10.28** Employment Agreement, dated June 19, 1992, between the Company and James Maluta.
- 10.29** Employment Agreement, dated December 8, 1995, between the Company and Todd E. Simpson.
- 10.30** Employment Agreement, dated February 10, 1994, between the Company and Walter C. Ogier.
- 10.31** Employment Agreement, dated April 19, 1994, between the Company and Thomas E. Muller, Ph.D.
- 10.32** Employment Agreement, dated October 26, 1995, between the Company and Alan K. Smith, Ph.D.
- 10.33** Consulting Agreement, dated June 1, 1995, between the Company and Stephen G. Emerson, M.D., Ph.D.
- 10.34** Form of Subscription Agreement for the purchase of Series D Preferred Stock (Enterprise Development Fund L.P., Enterprise Development Fund II, L.P. and Northwest Ohio Venture Fund Limited Partnership).
- 10.35** Stock Purchase Agreement, dated January 8, 1996, among the Company, SBIC Partners, L.P. and the State Treasurer of the State of Michigan.
- 10.36** Form of Subscription Agreement for the purchase of Series D Preferred Stock (Brentwood Associates V, L.P., Candice E. Appleton Family Trust, Candis J. Stern, Helmut F. Stern, H&Q Life Science Technology Fund, H&Q London Ventures, State Treasurer of the State of Michigan and Windpoint Partners II, Limited Partnership).
- 10.37** Subscription Agreement, dated December 11, 1995, between the Company and Northwest Ohio Venture Fund Limited Partnership.
- 10.38# Second Amendment to Promissory Note payable to the Company by Stephen G. Emerson, M.D., Ph.D., dated June 30, 1997.
- 10.39# Second Amendment to Promissory Note payable to the Company by R. Douglas Armstrong, Ph.D., dated June 30, 1997.
- 10.40# Amendment to License and Supply Agreement, dated August 25, 1997, between Immunex Corporation and the Company.
- 10.41**** Strategic Planning Consulting Services and Collaboration Agreement, dated October 7, 1997, between Burrill & Company, LLC and the Company.
- 10.42**** Amendment to Stock Purchase Agreement among the Company, SBIC Partners, L.P. and the State Treasurer of the State of Michigan, dated April 23, 1997.
- 10.43**** Form of Preferred Stock Purchase Agreement to be entered into among the Company and the purchasers of the 5 1/2% Convertible Preferred Stock of the Company.
- 10.44**** Employment Agreement, dated October 24, 1997, between the Company and Bruce W. Husel.
- 11.1# Statement regarding computation of net loss per share.
- 16.1*** Letter from Coopers & Lybrand L.L.P., dated July 15, 1997.
- 23.1 Consent of Price Waterhouse LLP (see page II-6).
- 23.2**** Consent of Pepper, Hamilton & Scheetz (included in Exhibit 5.1).
- 23.3**** Consent of Oblon, Spivak, McClelland, Maier & Neustadt, P.C.

24.1**** Power of Attorney.
27.1# Financial Data Schedule.
27.2% Financial Data Schedule.

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- * Incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended December 31, 1996, as filed on March 7, 1997.
- ** Incorporated by reference to the Company's Registration Statement on Form S-1 (No. 333-15415), declared effective on February 3, 1997.
- *** Incorporated by reference to the Company's Current Report on Form 8-K, as filed on July 16, 1997.
- **** Previously filed as an exhibit to this Registration Statement.
- # Incorporated by reference to the Company's Annual Report on Form 10-K for the year ended June 30, 1997, as filed on September 25, 1997.
- % Incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 1997, as filed on November 14, 1997.
- + Confidential treatment has been granted as to a portion of this exhibit.

AASTROM BIOSCIENCES, INC.

CERTIFICATE OF DESIGNATION

Pursuant to Section 302 of the
Michigan Business Corporation Act

5 1/2% CONVERTIBLE PREFERRED STOCK

Aastrom Biosciences, Inc., a Michigan corporation (the "Corporation"), hereby certifies that the following resolution has been duly adopted by the Board of Directors of the Corporation:

RESOLVED, that pursuant to the authority expressly granted to and vested in the Board of Directors of the Corporation (the "Board") by the provisions of the Restated Articles of Incorporation of the Corporation (the "Articles of Incorporation"), there hereby is created, out of the 5,000,000 shares of preferred stock of the Corporation authorized in Article III of the Articles of Incorporation (the "Preferred Stock"), a series of the Preferred Stock consisting of 2,400,000 shares, which series shall have the following powers, designations, preferences and relative, participating, optional and other rights, and the following qualifications, limitations and restrictions:

1. Designation and Amount. This series of Preferred Stock shall be

designated the 5 1/2% Convertible Preferred Stock, and the authorized number of shares constituting such series shall be 2,400,000. The 5 1/2% Convertible Preferred Stock shall have no par value.

2. Dividend Rights of 5 1/2% Convertible Preferred Stock. Subject to the

dividend provisions fixed by the Board for any series of Preferred Stock designated by the Board in the future (which series shall not receive any dividends in preference to the 5 1/2% Convertible Preferred Stock but may receive dividends on a pari passu basis with the 5 1/2% Convertible Preferred Stock), the holders of 5 1/2% Convertible Preferred Stock shall be entitled to receive dividends, out of any assets at the time legally available therefor, at the rate equal to five and one-half percent (5.5%) of the price at which the shares of 5 1/2% Convertible Preferred Stock are first sold by the Corporation to the public (the "Issue Price") per annum. The right to dividends on the 5 1/2% Convertible Preferred Stock shall be cumulative and shall accrue commencing on the date of issuance, on a quarterly basis on the last day of March, June, September and December of each year (the "Accrual Dates"). Accrued but unpaid dividends shall not bear interest. In lieu of the payment of a cash dividend, the Board may elect to pay all or any portion of the dividend in the form of shares of common stock of the Corporation ("Common Stock") with a value equivalent to the cash dividend that would have been paid (such value to be based on the closing sale price of the Common Stock on the Accrual Date or, if the Common Stock is not traded in a public market at such time, on the good faith determination of such value by the Board), and the Board shall

make such election within thirty (30) days of each Accrual Date. No dividends shall be paid on any Common Stock unless there are no accrued and unpaid dividends on the 5 1/2% Convertible Preferred Stock and at the same time a dividend is paid with respect to all outstanding shares of 5 1/2% Convertible Preferred Stock in an amount for each such share of 5 1/2% Convertible Preferred Stock equal to the aggregate amount of such dividends payable on that number of shares of Common Stock into which each such share of 5 1/2% Convertible Preferred Stock could then be converted. Accrued but unpaid dividends shall be due and payable, to the holders of record of shares of 5 1/2% Convertible Preferred Stock on the Accrual Date, on the date thirty-five (35) days following each Accrual Date (the "Regular Dividend Payment Date"); provided,

however, that in the event of any automatic conversion of shares of 5 1/2%

Convertible Preferred Stock into Common Stock pursuant to Section 5(c), all accrued but unpaid dividends shall be due and payable immediately prior to such conversion (along with each Regular Dividend Payment Date, the "Dividend Payment Dates"). The person or persons entitled to receive any shares of Common Stock in payment of such dividends shall be treated for all purposes as the record holder or holders of such shares on the Dividend Payment Date. In the event that the Board shall elect to pay all or any portion of any dividend in shares of Common Stock, such shares shall be subject to appropriate adjustment in the event of any stock split, stock dividend, recapitalization or similar event occurring between the Accrual Date and the Dividend Payment Date, and, in the event that the record date for any dividend or distribution on the Common Stock shall occur between the Accrual Date and the Dividend Payment Date, such dividend or distribution shall be payable on such shares on the Dividend Payment Date.

3. Preference on Liquidation. Subject to the liquidation preferences of

any series of Preferred Stock designated by the Board in the future (which series shall not receive any payment upon any liquidation, dissolution or winding up of the Corporation in preference to the 5 1/2% Convertible Preferred Stock but may be entitled to receive such a payment on a pari passu basis with the 5 1/2% Convertible Preferred Stock), in the event of any liquidation, dissolution or winding up of the Corporation, distributions to holders of 5 1/2% Convertible Preferred Stock and holders of Common Stock shall be made in the following manner:

(a) Amount, Priority, Etc.

(i) The holders of 5 1/2% Convertible Preferred Stock shall be entitled to receive on account of each share of 5 1/2% Convertible Preferred Stock then held by them, prior and in preference to any distribution of any of the assets of the Corporation to the holders of the Common Stock by reason of their ownership of such stock, the sum of: (A) the Issue Price, adjusted for any stock split, stock combination, stock distribution or stock dividend with respect to such shares; plus (B) the amount of any dividends accruing through the date of distribution, whether or not earned or declared. If the assets and funds available for distribution among the holders of 5 1/2% Convertible Preferred Stock and among the holders of any series of Preferred Stock ranking on a parity with the 5 1/2% Convertible Preferred Stock with respect to this subsection (a)(i) of this Section 3 as to the distribution of assets and funds upon such dissolution, liquidation or winding up shall be insufficient to permit the payment to such holders of their full liquidation payments, then the entire assets and funds of the Corporation legally available for such distribution shall be distributed ratably among such holders in proportion to their aggregate preferential amounts.

(ii) After payment in full to the holders of 5 1/2% Convertible Preferred Stock of all amounts exclusively payable on or with respect to said shares pursuant to subsection (a)(i) of this Section 3, the holders of the Common Stock shall be entitled to receive the entire remaining assets and funds of the Corporation legally available for such distribution, with such amounts to be distributed ratably among such holders in proportion to their respective holdings of shares of Common Stock.

(b) Distributions Other Than Cash. In the event the Corporation shall

propose to take any action of the types described in Section 3(a) which will involve the distribution of assets other than cash, the Board shall make a good faith determination of the value of the assets to be distributed to the holders of shares of 5 1/2% Convertible Preferred Stock. The Corporation shall give prompt written notice to each holder of shares of 5 1/2% Convertible Preferred Stock of such valuation, which notice shall be provided no later than the notice provided in Section 5(1). All notices pursuant to this Section 3 hereof shall be deemed given upon personal delivery or upon deposit in a United States Post Office by registered or certified mail.

4. Voting. Except as otherwise required by law, the shares of 5 1/2%

Convertible Preferred Stock shall be voted together with the Common Stock at any annual or special meeting of the stockholders of the Corporation, or may act by written consent in the same manner as the Common Stock, and shall have the voting rights and powers equal to the voting rights of the Common Stock, upon the following basis: each holder of shares of 5 1/2% Convertible Preferred Stock shall be entitled to such number of votes for the shares of 5 1/2% Convertible Preferred Stock held by him on the record date for such meeting or action to be taken by written consent, as shall be equal to the nearest whole number of shares of Common Stock into which such holder's shares of 5 1/2% Convertible Preferred Stock are convertible immediately after the close of business on the record date for such meeting or action to be taken by written consent, as the case may be.

5. Conversion Rights. The holders of 5 1/2% Convertible Preferred Stock

shall have conversion rights as follows:

(a) Voluntary Conversion. Each share of 5 1/2% Convertible

Preferred Stock shall be convertible, at the option of the holder thereof, at any time at the principal office of the Corporation or any transfer agent for such shares, into fully paid and nonassessable shares of Common Stock. The number of shares of Common Stock into which each share of 5 1/2% Convertible Preferred Stock shall be converted is equal to the Issue Price divided by the Conversion Price. The initial Conversion Price for the 5 1/2% Convertible Preferred Stock shall be equal to the Issue Price, subject to adjustment as provided in Section 5(g).

(b) Mandatory Conversion Upon Stock Value Benchmark. Each share

of 5 1/2% Convertible Preferred Stock shall be automatically converted into shares of Common Stock at the then effective Conversion Price in the event that, at any time following the second anniversary of the date upon which the first share of 5 1/2% Convertible Preferred Stock has been issued, the closing bid price of the Common Stock exceeds a price per share of double the Issue Price for twenty (20) consecutive trading days.

(c) Mandatory Conversion Upon Merger. Each share of 5 1/2%

Convertible Preferred Stock shall be automatically converted into shares of Common Stock at the then effective Conversion Price immediately prior to the time at which shareholders of record for participation in the merger shall be determined in any merger transaction (i) to which the Corporation is a party, (ii) in which the consideration received by the Corporation or its shareholders equals or exceeds a value of double the Issue Price per share of Common Stock outstanding as of the date upon which a definitive agreement relating to such transaction is executed by the parties thereto (the "Execution Date") (with all shares of capital stock of the Corporation that are convertible into Common Stock considered on an as-converted basis), and (iii) in which either the Corporation is not the surviving entity or in which the holders of the Corporation's voting securities prior to the transaction own less than fifty percent (50%) of the voting securities of the combined entity immediately following the merger. The consideration referred to in the preceding clause (ii) shall be valued as of the Execution Date, and, in the event that such consideration is other than (A) cash, or (B) publicly traded securities of an entity having an aggregate market capitalization of at least \$160,000,000 and average daily trading volume in its securities of at least 50,000 shares over the twenty (20) trading days preceding the Execution Date (in which case such securities shall be valued in accordance with the closing trading price on the last trading day preceding the Execution Date), such consideration shall be valued by an investment banking firm or other reputable firm or institution selected by the holders of a majority of the outstanding shares of 5 1/2% Convertible Preferred Stock and reasonably acceptable to the Company.

(d) Mandatory Conversion Upon Partial Conversion. Each share of 5

1/2% Convertible Preferred Stock shall be automatically converted into shares of Common Stock at the then effective Conversion Price in the event that, at any time following the date of the initial issuance of shares of 5 1/2% Convertible Preferred Stock (the "Initial Issuance Date"), less than 500,000 shares of 5 1/2% Convertible Preferred Stock remain outstanding (as adjusted for stock splits, stock dividends, recapitalizations and the like).

(e) Effect of Conversion on Accrued Dividends. Upon any

conversion as described in this Section 5, each holder of the 5 1/2% Convertible Preferred Stock shall remain entitled to receive all accrued and unpaid dividends earned through the date of conversion.

(f) Conversion Procedure. The holder of any shares of 5 1/2%

Convertible Preferred Stock may exercise the conversion right specified in Section 5(a) by surrendering to the Corporation or any transfer agent of the Corporation the certificate or certificates for the shares to be converted, accompanied by written notice specifying the number of shares to be converted. Upon the occurrence of any event specified in Section 5(b), Section 5(c) or Section 5(d), the outstanding shares of 5 1/2% Convertible Preferred Stock shall be converted automatically without any further action by the holders of such shares and whether or not the certificates representing such shares are surrendered to the Corporation or its transfer agent; provided, however, that

the Corporation shall not be obligated to issue to any holder certificates evidencing the shares of Common Stock issuable upon such conversion unless certificates evidencing such shares of 5 1/2% Convertible Preferred Stock are delivered either to the Corporation or any transfer agent of the Corporation. Conversion shall be deemed to have been effected on the date when delivery of notice of an election to convert and of certificates for shares being converted is made or on the

date of the occurrence of any event of conversion specified in Section 5(b), Section 5(c) or Section 5(d), as the case may be, and such date is referred to herein as the "Conversion Date." As promptly as practicable thereafter (and after surrender of the certificate or certificates representing shares of 5 1/2% Convertible Preferred Stock to the Corporation or any transfer agent of the Corporation), the Corporation shall issue and deliver to such holder a certificate or certificates for the number of full shares of Common Stock to which such holder is entitled. No fractional shares of Common Stock shall be issued by the Corporation and all such fractional shares shall be disregarded. In lieu thereof, the Corporation shall pay in cash the fair market value of any such fractional share as determined by the Board. The person in whose name the certificate or certificates for Common Stock are to be issued shall be deemed to have become a holder of record of such Common Stock on the applicable Conversion Date. Upon conversion of only a portion of the number of shares covered by a certificate representing shares of 5 1/2% Convertible Preferred Stock surrendered for conversion (in the case of conversion pursuant to Section 5(a)), the Corporation shall issue and deliver to or upon the written order of the holder of the certificate so surrendered for conversion, at the expense of the Corporation, a new certificate covering the number of shares of 5 1/2% Convertible Preferred Stock representing the unconverted portion of the certificate so surrendered.

(g) Adjustments to Conversion Price. The Conversion Price for the

5 1/2% Convertible Preferred Stock shall be subject to adjustment from time to time as follows:

(i) Adjustment for Stock Splits, Recapitalizations, Etc. In

case the Corporation shall at any time (i) subdivide the outstanding Common Stock, or (ii) issue a stock dividend on its outstanding Common Stock, the Conversion Price in effect immediately prior to such subdivision or the issuance of such stock dividend shall be proportionately decreased. In case the Corporation shall at any time combine its outstanding Common Stock, the Conversion Price in effect immediately prior to such combination shall be proportionately increased. All such adjustments described herein shall be effective at the close of business on the date of such subdivision, stock dividend or combination, as the case may be.

(ii) Adjustment Upon Other Reclassifications. In case of any

reclassification of the Common Stock other than a recapitalization described in Section 5(g)(i), the then effective Conversion Price shall be adjusted so that each share of the 5 1/2% Convertible Preferred Stock shall thereafter be convertible into that number of shares of stock or other securities or property to which a holder of the number of shares of Common Stock issuable upon conversion of a share of 5 1/2% Convertible Preferred Stock immediately prior to such reclassification would have been entitled upon such reclassification. In any such case, appropriate adjustment (as determined by the Board) shall be made in the application of the provisions herein set forth with respect to the rights and interests thereafter of the holders of 5 1/2% Convertible Preferred Stock, such that the provisions set forth herein shall thereafter be applicable, as nearly as reasonably may be, in relation to any share of stock or other property thereafter issuable upon conversion.

(iii) Adjustment Upon Issuance of Equity Securities. Upon the

issuance by the Corporation of Equity Securities (as defined in Section 5(g)(iii)(B)(1) below) at a consideration per share less than the Conversion Price in effect immediately prior to the time of

such issue or sale other than an issuance of stock or securities pursuant to Section 5(g)(i) or Section 5(g)(ii) above or the issuance of shares of Common Stock upon conversion of any shares of 5 1/2% Convertible Preferred Stock, then forthwith upon such issue or sale, such Conversion Price shall be reduced to a price (calculated to the nearest hundredth of a cent) determined by multiplying such Conversion Price by a fraction:

(A) the numerator of which shall be equal to the sum of (x) the number of shares of Common Stock outstanding immediately prior to such issue or sale (other than shares issued subsequent to the Original Issuance Date that were not issued upon conversion, exercise or exchange of securities or obligations outstanding prior to the Original Issuance Date that are excluded from the definition of "Equity Securities" below in Section 5(g)(iii)(B)(1) by clause (a), (b), (c), or (d) of such section) multiplied by the Conversion Price in effect immediately prior to such adjustment, (y) the number of shares of Common Stock issuable upon conversion or exchange of any obligations or of any securities of the Corporation outstanding immediately prior to such adjustment (other than securities or obligations issued subsequent to the Original Issuance Date that were not issued upon conversion, exercise or exchange of securities or obligations outstanding prior to the Original Issuance Date that are excluded from the definition of "Equity Securities" below in Section 5(g)(iii)(B)(1) by clause (a), (b), (c) or (d) of such section) multiplied by the Conversion Price in effect immediately prior to such adjustment, and (z) an amount equal to the aggregate "consideration actually received" by the Corporation upon such issue or sale; and

(B) the denominator of which shall be equal to the product of the Conversion Price in effect immediately prior to such adjustment multiplied by the sum of (x) the number of shares of Common Stock outstanding immediately after such issue or sale (other than shares issued subsequent to the Original Issuance Date (unless issued upon conversion, exercise or exchange of securities or obligations outstanding prior to the Original Issuance Date) that are excluded from the definition of "Equity Securities" below in Section 5(g)(iii)(B)(1) by clause (a), (b), (c), or (d) of such section), and (y) the number of shares of Common Stock issuable upon conversion or exchange of any obligations or of any securities of the Corporation outstanding immediately after such issue or sale (other than securities or obligations issued subsequent to the Original Issuance Date that were not issued upon conversion, exercise or exchange of securities or obligations outstanding prior to the Original Issuance Date that are excluded from the definition of "Equity Securities" below in Section 5(g)(iii)(B)(1) by clause (a), (b), (c) or (d) of such section).

For purposes of this Section 5(g)(iii), the following provisions shall be applicable:

(1) The term "Equity Securities" as used in this Section 5(g)(iii) shall mean any shares of Common Stock, or any obligation, or any share of stock or other security of the Corporation convertible into or exchangeable for Common Stock, except for (a) shares of Common Stock or options to purchase Common Stock issued or granted to officers, directors, employees or consultants of the Corporation and its subsidiaries pursuant to any stock option plan or employee stock purchase plan approved by the Board, (b) securities issued pursuant to an acquisition of another corporation or entity by the Corporation through a merger or otherwise, provided that the shareholders of the Corporation immediately prior to the transaction hold more than fifty percent (50%) of the voting power of the surviving or continuing

entity, (c) securities issued pursuant to contractual obligations of the Corporation existing prior to the initial issuance of shares of 5 1/2% Convertible Preferred Stock (as generally described in the Corporation's registration statement on Form S-1 (File No. 333-37439), as filed with the Securities and Exchange Commission on October 8, 1997), or (d) securities issued in any transaction approved by the Board if, in connection with or related to such transaction, the purchaser or recipient of such securities, or an affiliate of such purchaser or recipient, enters into or agrees to enter into (or has previously entered into) a material business relationship with the Corporation, including, but not limited to, a relationship relating to licensing, clinical development, product development, marketing or distribution.

(2) In case of an issue or sale for cash of shares of Common Stock, the "consideration actually received" by the Corporation therefor shall be deemed to be the amount of cash received, before deducting therefrom any commissions or expenses paid by the Corporation.

(3) In case of the issuance (otherwise than upon conversion or exchange of obligations or shares of stock of the Corporation) of additional shares of Common Stock for a consideration other than cash or a consideration partly other than cash, the amount of consideration other than cash received by the Corporation for such shares shall be deemed to be the value of such consideration, as determined in good faith by the Board.

(4) In case of the issuance by the Corporation in any manner of any rights to subscribe for or to purchase shares of Common Stock, or any options for the purchase of shares of Common Stock or stock convertible into Common Stock, all shares of Common Stock or stock convertible into Common Stock to which the holders of such rights or options shall be entitled to subscribe for or purchase pursuant to such rights or options shall be deemed "outstanding" as of the date of the offering of such rights or the granting of such options, as the case may be, and the minimum aggregate consideration named in such rights or options for the shares of Common Stock or stock convertible into Common Stock covered thereby, plus the consideration, if any, received by the Corporation for such rights or options, shall be deemed to be the "consideration actually received" by the Corporation (as of the date of the offering of such rights or the granting of such options, as the case may be) for the issuance of such shares.

(5) In case of the issuance or issuances by the Corporation in any manner of any obligations or of any shares of stock of the Corporation that shall be convertible into or exchangeable for Common Stock, all shares of Common Stock issuable upon the conversion or exchange of such obligations or shares shall be deemed issued as of the date such obligations or shares are issued, and the amount of the "consideration actually received" by the Corporation for such additional shares of Common Stock shall be deemed to be the sum of (x) the amount of consideration received by the Corporation upon the issuance of such obligations or shares, and (y) the minimum aggregate consideration, if any, other than such obligations or shares, receivable by the Corporation upon such conversion or exchange, except in adjustment of dividends.

(6) The amount of the "consideration actually received" by the Corporation upon issuance of any rights or options referred to in subsection (4) above or

upon the issuance of any obligations or shares which are convertible or exchangeable as described in subsection (5) above, and the amount of the consideration, if any, other than such obligations or shares so convertible or exchangeable, receivable by the Corporation upon the exercise, conversion or exchange thereof shall be determined in the same manner provided in subsections (2) and (3) above with respect to the consideration received by the Corporation in case of the issuance of additional shares of Common Stock; provided, however,

that if such obligations or shares of stock so convertible or exchangeable are issued in payment or satisfaction of any dividend upon any stock of the Corporation other than Common Stock, the amount of the "consideration actually received" by the Corporation upon the original issuance of such obligations or shares of stock so convertible or exchangeable shall be deemed to be the value of such obligations or shares of stock as of the date of the adoption of the resolution declaring such dividend, as determined by the Board at or as of that date.

(7) In the event the Corporation shall declare a distribution payable in securities of other persons, evidences of indebtedness issued by the Corporation or other persons or options or rights not referred to in this Section 5(g)(iii), then, in each such case, the holders of the 5 1/2% Convertible Preferred Stock shall be entitled to the distributions provided for in Section 3 above, and no adjustment to the Conversion Price provided for in this Section 5(g)(iii) shall be applicable.

(h) Reservation of Common Stock. The Corporation shall at all

times reserve and keep available, out of its authorized but unissued Common Stock, solely for the purpose of effecting the conversion of 5 1/2% Convertible Preferred Stock, the full number of shares of Common Stock deliverable upon the conversion of all 5 1/2% Convertible Preferred Stock from time to time outstanding. The Corporation shall from time to time (subject to obtaining necessary director and shareholder approval), in accordance with the laws of the State of Michigan, increase the authorized amount of its Common Stock if at any time the authorized number of shares of Common Stock remaining unissued shall not be sufficient to permit the conversion of all of the shares of 5 1/2% Convertible Preferred Stock at the time outstanding.

(i) Cancellation of Shares. Upon any conversion of 5 1/2%

Convertible Preferred Stock pursuant to this Section 5, the shares of 5 1/2% Convertible Preferred Stock which are converted shall not be reissued. Upon conversion of all of the then outstanding 5 1/2% Convertible Preferred Stock pursuant to this Section 5 and upon the taking of any action required by law, all matters set forth in this Certificate of Designation shall be eliminated from the Articles of Incorporation, shares of 5 1/2% Convertible Preferred Stock shall not be deemed outstanding for any purpose whatsoever, and all such shares shall revert to the status of authorized and unissued shares of Preferred Stock.

(j) No Impairment. The Corporation, whether by amendment of its

Articles of Incorporation or through any reorganization, transfer of assets, merger, dissolution, issue or sale of securities or any other voluntary action, will not avoid or seek to avoid the observance or performance of any of the terms to be observed or performed hereunder by the Corporation, but at all times in good faith will assist in the carrying out of all of such action as may be necessary or appropriate in order to protect the conversion rights pursuant to this Section 5 of the holders of the 5 1/2% Convertible Preferred Stock against impairment.

(k) Certificate as to Adjustments. Upon the occurrence of each

adjustment or readjustment of the Conversion Price pursuant to this Section 5, the Corporation at its expense promptly will compute such adjustment or readjustment in accordance with the terms hereof and prepare and furnish to each holder of shares of 5 1/2% Convertible Preferred Stock, a certificate setting forth such adjustment or readjustment and showing in detail the facts upon which such adjustment or readjustment is based. The Corporation, upon the written request at any time of any holder of 5 1/2% Convertible Preferred Stock, will furnish or cause to be furnished to such holder a like certificate setting forth (i) such adjustments and readjustments, (ii) the Conversion Price at the time in effect, and (iii) the number of shares of Common Stock and the amount, if any, of other property which at the time would be received upon the conversion of the 5 1/2% Convertible Preferred Stock held by such holder.

(l) Notices of Record Date. In the event of any taking by the

Corporation of a record of the holders of any class of securities as of a certain date for the purpose of determining the holders thereof who are entitled to receive any dividend (other than a regular cash dividend) or other distribution, any Equity Securities or any right to subscribe for, purchase or otherwise acquire any shares of stock of any class or any other securities or property, or to receive any other right, the Corporation will mail to each holder of 5 1/2% Convertible Preferred Stock a notice specifying the date on which any such record is to be taken for the purpose of such dividend, distribution or right, and the amount and character of such dividend, distribution or right. Such notice shall be given at least twenty (20) days prior to the date specified therein for the taking of such record.

(m) Notices. Any notices required by the provisions of this

Section 5 to be given to the holders of shares of 5 1/2% Convertible Preferred Stock must be in writing and will be deemed given upon personal delivery, one day after deposit with a reputable overnight courier service for overnight delivery or after transmission by facsimile telecopier with confirmation of successful transmission, or five days after deposit in the U.S. mail, by registered or certified mail postage prepaid, or upon actual receipt if given by any other method, addressed to each holder of record at his address appearing on the books of the Corporation.

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Designation to be signed by its President, and attested by its Secretary, this 25th day of November, 1997.

AASTROM BIOSCIENCES, INC.

By: /s/ R. Douglas Armstrong

R. Douglas Armstrong, President

Attest:

By: /s/ Todd E. Simpson

Todd E. Simpson, Secretary