
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, D.C. 20549

**AMENDMENT NO. 4
TO
FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933**

STEMLINE THERAPEUTICS, INC.

(Exact name of registrant as specified in its charter)

DELAWARE <i>(State or other jurisdiction of incorporation or organization)</i>	2834 <i>(Primary Standard Industrial Classification Code Number)</i>	45-0522567 <i>(I.R.S. Employer Identification Number)</i>
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750 Lexington Avenue
Sixth Floor
New York, New York 10022
(646) 502-2310

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Ivan Bergstein, M.D.
Chairman, President and Chief Executive Officer
Stemline Therapeutics, Inc.
750 Lexington Avenue
Sixth Floor
New York, New York 10022
(646) 502-2310

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

James T. Barrett, Esq.
Matthew J. Gardella, Esq.
Edwards Wildman Palmer LLP
111 Huntington Avenue
Boston, Massachusetts 02199
(617) 239-0100

Ivan Blumenthal, Esq.
Mintz, Levin, Cohn, Ferris,
Glovsky and Popeo, P.C.
Chrysler Center
666 Third Avenue
New York, New York 10017
(212) 935-3000

Approximate date of commencement of proposed sale to public: As soon as practicable after this Registration Statement is declared 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.

If this Form is 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 the 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.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer

Accelerated filer

Non-accelerated filer
(Do not check if a
smaller reporting company)

Smaller reporting company

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 Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.



EXPLANATORY NOTE

This Amendment No. 4 to the Registration Statement on Form S-1 of Stemline Therapeutics, Inc. (File No. 333-180515) is being filed solely for the purpose of amending certain filing fee expense information set forth in Item 13 of Part II and filing certain exhibits. This Amendment No. 4 does not modify any provisions of the prospectus constituting Part I of the Registration Statement or Items 14, 15 or 17 of Part II of the Registration Statement. Accordingly, such prospectus has not been included herein.

PART II – INFORMATION NOT REQUIRED IN PROSPECTUS

ITEM 13. OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION.

The following table sets forth the expenses to be incurred in connection with the offering described in this Registration Statement, other than underwriting discounts and commissions, all of which will be paid by us. All amounts are estimates except the Securities and Exchange Commission registration fee and the Financial Industry Regulatory Authority, Inc. filing fee.

Securities and Exchange Commission registration fee	5,996
Financial Industry Regulatory Authority, Inc. filing fee	6,350
NASDAQ listing fee	125,000
Accountants' fees and expenses	700,000
Legal fees and expenses	1,600,000
Blue sky fees and expenses	10,000
Transfer agent's fees and expenses	2,500
Printing and engraving expenses	200,000
Miscellaneous	50,154
Total expenses	\$ 2,700,000

ITEM 14. INDEMNIFICATION OF DIRECTORS AND OFFICERS.

Section 102 of the Delaware General Corporation Law permits a corporation to eliminate the personal liability of its directors or its stockholders for monetary damages for a breach of fiduciary duty as a director, except where the director breached his or her duty of loyalty, failed to act in good faith, engaged in intentional misconduct or knowingly violated a law, authorized the payment of a dividend or approved a stock repurchase in violation of Delaware corporate law or obtained an improper personal benefit. Our certificate of incorporation provides that no director shall be personally liable to us or our stockholders for monetary damages for any breach of fiduciary duty as a director, notwithstanding any provision of law imposing such liability, except to the extent that the Delaware General Corporation Law prohibits the elimination or limitation of liability of directors for breaches of fiduciary duty.

Section 145 of the Delaware General Corporation Law provides that a corporation has the power to indemnify a director, officer, employee or agent of the corporation and certain other persons serving at the request of the corporation in related capacities against expenses (including attorneys' fees), judgments, fines and amounts paid in settlements actually and reasonably incurred by the person in connection with an action, suit or proceeding to which he or she is party or is threatened to be made a party by reason of such position, if such person acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the corporation, and, in any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful, except that, in the case of actions brought by or in the right of the corporation, no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or other adjudicating court determines that, despite the adjudication of liability but in view of all of the circumstances of the case, such person is fairly and reasonably entitled to indemnification for such expenses which the Court of Chancery or such other court shall deem proper.

Our certificate of incorporation provides that we will indemnify each person who was or is a party or threatened to be made a party to any threatened, pending or completed action, suit or proceeding whether civil, criminal, administrative or investigative (other than an action by or in the right of us) by

reason of the fact that he or she is or was, or has agreed to become, our director or officer, or is or was serving, or has agreed to serve, at our request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise (all such persons being referred to as an "Indemnitee"), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding and any appeal therefrom, if such Indemnitee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, our best interests, and, with respect to any criminal action or proceeding, he or she had no reasonable cause to believe his or her conduct was unlawful.

Our certificate of incorporation also provides that we will indemnify any Indemnitee who was or is a party to an action or suit by or in the right of us to procure a judgment in our favor by reason of the fact that the Indemnitee is or was, or has agreed to become, our director or officer, or is or was serving, or has agreed to serve, at our request as a director, officer, partner, employee or trustee or, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise, or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees) and, to the extent permitted by law, amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding, and any appeal therefrom, if the Indemnitee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, our best interests, except that no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to us, unless a court determines that, despite such adjudication but in view of all of the circumstances, he or she is entitled to indemnification of such expenses. Notwithstanding the foregoing, to the extent that any Indemnitee has been successful, on the merits or otherwise, he or she will be indemnified by us against all expenses (including attorneys' fees) actually and reasonably incurred by him or her or on his or her behalf in connection therewith. If we don't assume the defense, expenses must be advanced to an Indemnitee under certain circumstances.

We have entered into indemnification agreements with our directors. In general, these agreements provide that we will indemnify the director to the fullest extent permitted by law for claims arising in his or her capacity as a director of our Company or in connection with his or her service at our request for another corporation or entity. The indemnification agreements also provide for procedures that will apply in the event that a director makes a claim for indemnification and establish certain presumptions that are favorable to the director.

We maintain a general liability insurance policy which covers certain liabilities of our directors and officers arising out of claims based on acts or omissions in their capacities as directors or officers.

The underwriting agreement we will enter into in connection with the offering of common stock being registered hereby provides that the underwriters will indemnify, under certain conditions, our directors and officers (as well as certain other persons) against certain liabilities arising in connection with such offering.

ITEM 15. RECENT SALES OF UNREGISTERED SECURITIES.

Set forth below is information regarding shares of common stock and convertible promissory notes issued, and options granted, by us within the past three years that were not registered under the Securities Act of 1933, as amended, or the Securities Act. Also included is the consideration, if any, received by us for such shares, notes and options and information relating to the section of the Securities Act, or rule of the Securities and Exchange Commission, under which exemption from registration was claimed.

(a) Issuances of Common Stock and Convertible Notes

In March 2010, we entered into a note purchase agreement pursuant to which we redeemed from the Pequot Funds all of the shares of our Series A Preferred Stock held by them, which represented all of our issued and outstanding shares of Series A Preferred Stock, in exchange for (i) an aggregate cash payment of \$750,000, (ii) 823,143 shares of our common stock and (iii) 2.45% senior unsecured convertible notes in the aggregate principal amount of \$1,250,000. Pursuant to the note purchase agreement, the Pequot Funds immediately transferred such shares of common stock and the notes to a fund affiliated with Neuberger Berman Group LLC, which presently holds such shares and notes.

In April 2010, we issued and sold an aggregate of 411,573 shares of our common stock to certain existing investors at a purchase price per share of \$1.46 for an aggregate purchase price of \$600,000.

In January 2012, we sold an aggregate of \$0.9 million of convertible promissory notes in a private placement to certain existing and other investors. The notes accrue interest at a rate of 1.27% per annum and have a maturity date of January 2, 2017, unless converted prior thereto. The principal amount of the notes and accrued and unpaid interest thereon will automatically convert into shares of our common stock upon the closing of this offering, at a conversion price equal to 87.5% of the initial public offering price.

In March 2012, we issued a total of 47,782 shares of restricted common stock to our directors and a service provider. These shares of restricted stock vest as to 25% of the award upon the closing of this offering, with the remaining 75% vesting in equal annual installments, as long as the respective party continues as a director or service provider, as applicable, through the third anniversary of the date of grant.

In April 2012, we issued a total of 21,236 shares of restricted common stock to certain of our directors. These shares of restricted stock vest as to 25% of the award upon the closing of this offering, with the remaining 75% vesting in equal annual installments, as long as the respective party continues as a director, through the third anniversary of the date of grant.

No underwriters were involved in the foregoing sales of securities. The securities described in this section (a) of Item 15 were issued to investors in reliance upon the exemption from the registration requirements of the Securities Act, as set forth in Section 4(2) under the Securities Act, including in some cases, Regulation D promulgated thereunder, relative to transactions by an issuer not involving any public offering, to the extent an exemption from such registration was required. All purchasers of shares of our common stock and convertible notes described above represented to us in connection with their purchase that they were accredited investors and were acquiring the shares and convertible notes for their own account for investment purposes only and not with a view to, or for sale in connection with, any distribution thereof. The purchasers received written disclosures that the securities had not been registered under the Securities Act and that any resale must be made pursuant to a registration statement or an available exemption from such registration.

(b) Stock Option Grants

Since January 1, 2009, we have issued to certain employees, directors and consultants options to purchase an aggregate of 2,636,875 shares of common stock as of June 30, 2012, of which, as of June 30, 2012, none had been exercised or forfeited, and options to purchase 3,709,844 shares of common stock remained outstanding at a weighted-average exercise price of \$1.39 per share.

The stock options and the common stock issuable upon the exercise of such options as described in this section (b) of Item 15 were issued pursuant to written compensatory plans or arrangements with our employees, directors and consultants, in reliance on the exemption from the registration requirements

of the Securities Act provided by Rule 701 promulgated under the Securities Act or the exemption set forth in Section 4(2) under the Securities Act and Regulation D promulgated thereunder relative to transactions by an issuer not involving any public offering. All recipients either received adequate information about us or had access, through employment or other relationships, to such information.

All of the foregoing securities are deemed restricted securities for purposes of the Securities Act. All certificates representing the issued shares of common stock and the convertible notes described in this Item 15 included appropriate legends setting forth that the securities had not been registered and the applicable restrictions on transfer.

ITEM 16. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES.

The exhibits to the Registration Statement are listed in the Exhibit Index attached hereto and incorporated by reference herein.

ITEM 17. UNDERTAKINGS.

- (a) The undersigned registrant hereby undertakes to provide to the underwriters at the closing specified in the underwriting agreement, certificates in such denominations and registered in such names as required by the underwriters to permit prompt delivery to each purchaser.
- (b) 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 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 Act and will be governed by the final adjudication of such issue.
- (c) The undersigned registrant hereby 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 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (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.
 - (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 Amendment No. 4 to the Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of New York, State of New York, on this 26th day of July, 2012.

STEMLINE THERAPEUTICS, INC.

By: /s/ IVAN BERGSTEIN, M.D.

Ivan Bergstein, M.D.
Chairman, President and Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, this Amendment No. 4 to the Registration Statement has been signed by the following persons in the capacities held on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ IVAN BERGSTEIN, M.D.</u> Ivan Bergstein, M.D.	Chairman, President, Chief Executive Officer and Director (Principal Executive Officer)	July 26, 2012
<u>/s/ JOHN T. CAVAN</u> John T. Cavan	Chief Accounting Officer (Principal Financial and Accounting Officer)	July 26, 2012
<u>*</u> J. Kevin Buchi	Director	July 26, 2012
<u>*</u> Kenneth Zuerblis	Director	July 26, 2012
<u>*</u> Ron Bentsur	Director	July 26, 2012
<u>*</u> Eric L. Dobmeier	Director	July 26, 2012
<u>*By: /s/ IVAN BERGSTEIN, M.D.</u> <i>Attorney-in-Fact</i>		

EXHIBIT INDEX

<u>Exhibit No.</u>	<u>Description</u>
1.1**	Underwriting Agreement.
3.1**	Second Amended and Restated Certificate of Incorporation of the Company filed with the Secretary of State of the State of Delaware on March 16, 2010.
3.2**	Amendment to Second Amended and Restated Certificate of Incorporation of the Company filed with the Secretary of State of the State of Delaware on March 15, 2012.
3.3**	Bylaws of the Company.
3.4	Restated Certificate of Incorporation of the Company to be effective upon the closing of this offering.
3.5**	Amended and Restated Bylaws of the Company to be effective upon the closing of this offering.
3.6	Amendment to Second Amended and Restated Certificate of Incorporation of the Company filed with the Secretary of State of the State of Delaware on July 16, 2012.
4.1**	Specimen certificate evidencing shares of common stock.
5.1**	Opinion of Edwards Wildman Palmer LLP.
10.1†**	Research and License Agreement by and among the Company, Scott and White Memorial Hospital, Scott, Sherwood and Brindley Foundation and Arthur E. Frankel, M.D., dated June 15, 2006; as amended by that certain First Amendment to Research and License Agreement dated December 9, 2008, that certain Second Amendment to Research and License Agreement dated March 17, 2010 and that certain Third Amendment to Research and License Agreement dated July 12, 2011.
10.2†**	Exclusive License Agreement between the Company and the University of Pittsburgh, dated September 30, 2009.
10.3†**	Exclusive Patent and Non-Exclusive Know-How Licence Agreement between the Company and Cambridge University Technical Services Limited, dated September 16, 2004.
10.4†**	Non-Exclusive License Agreement between the Company and the University of Pittsburgh, dated March 30, 2012.
10.5†**	Non-Exclusive License Agreement between the Company and the University of Pittsburgh, dated March 21, 2012.
10.6**	Employment Agreement, dated November 6, 2011, between the Company and Eric K. Rowinsky, M.D.
10.7**	Offer letter between the Company and John T. Cavan dated March 27, 2012.
10.8**	Employment Agreement, dated June 15, 2012, between the Company and Ivan Bergstein, M.D.
10.9**	Form of Indemnification Agreement between the Company and each director.
10.10**	Amended and Restated 2004 Employee, Director and Consultant Stock Plan.
10.11**	Form of Incentive Stock Option Agreement under Amended and Restated 2004 Employee, Director and Consultant Stock Plan.
10.12**	Form of Non-qualified Stock Option Agreement under Amended and Restated 2004 Employee, Director and Consultant Stock Plan.

Exhibit No.	Description
10.13**	2012 Equity Incentive Plan.
10.14**	Form of Incentive Stock Option Agreement under 2012 Equity Incentive Plan.
10.15**	Form of Non-qualified Stock Option Agreement under 2012 Equity Incentive Plan.
10.16**	2011 Employee Cash Bonus Plan.
10.17**	Senior Unsecured Convertible Note issued by the Company in favor of NB Athyrium LLC, dated March 16, 2010.
10.18**	Exclusive License Agreement between the Company and Ivan Bergstein, M.D., dated December 1, 2003.
10.19**	Amended and Restated 2011 Employee Cash Bonus Plan.
10.20**	Assignment Agreement between the Company and Ivan Bergstein, M.D., dated June 15, 2012.
10.21**	Offer Letter between the Company and Eric L. Dobmeier, dated April 26, 2012.
10.22**	Offer Letter between the Company and J. Kevin Buchi, dated March 9, 2012.
10.23**	Offer Letter between the Company and Kenneth Zuerblis, dated March 12, 2012.
10.24	Amendment, dated July 26, 2012, to Senior Unsecured Convertible Note issued by the Company in favor of NB Athyrium LLC.
10.25	Letter Agreement between the Company and John T. Cavan, dated July 26, 2012.
23.1**	Consent of Ernst & Young LLP, Independent Registered Accounting Firm.
23.2**	Consent of Edwards Wildman Palmer LLP (included in Exhibit 5.1).
24.1**	Power of Attorney.

** Previously filed.

† Confidential treatment requested as to portions of the exhibit. Confidential materials omitted and filed separately with the Securities and Exchange Commission.

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**RESTATED CERTIFICATE OF INCORPORATION
OF
STEMLINE THERAPEUTICS, INC.**

Stemline Therapeutics, Inc. (the "Corporation"), a corporation organized and existing under and by virtue of the provisions of the General Corporation Law of the State of Delaware, does hereby certify as follows:

The current name of the Corporation is Stemline Therapeutics, Inc. The original Certificate of Incorporation was filed with the Secretary of State of the State of Delaware on August 8, 2003. The Certificate of Incorporation was amended on June 18, 2004, amended and restated on October 4, 2007, amended on March 15, 2012, and amended on July 16, 2012.

A resolution was duly adopted by the Board of Directors of the Corporation pursuant to Sections 242 and 245 of the General Corporation Law of the State of Delaware setting forth this Restated Certificate of Incorporation and declaring such Restated Certificate of Incorporation advisable. The stockholders of the Corporation duly approved and adopted this Restated Certificate of Incorporation by written consent in accordance with Sections 228, 242 and 245 of the General Corporation Law of the State of Delaware.

Accordingly, the Certificate of Incorporation of the Corporation, as previously amended and restated, is hereby further amended and restated in its entirety to read as follows:

FIRST: The name of the Corporation is Stemline Therapeutics, Inc.

SECOND: The address of the Corporation's registered office in the State of Delaware is 1209 Orange Street, in the City of Wilmington, County of New Castle. The name of its registered agent at such address is Corporation Trust Company.

THIRD: The nature of the business or purposes to be conducted or promoted by the Corporation is to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law of the State of Delaware.

FOURTH: The total number of shares of all classes of stock that the Corporation shall have authority to issue is 55,000,000 shares, consisting of (i) 45,000,000 shares of Common Stock, \$0.0001 par value per share ("Common Stock"), and (ii) 10,000,000 shares of Preferred Stock, \$0.0001 par value per share ("Preferred Stock").

The following is a statement of the designations and the powers, privileges and rights, and the qualifications, limitations or restrictions thereof in respect of each class of capital stock of the Corporation.

A COMMON STOCK.

1. General. The voting, dividend and liquidation rights of the holders of the Common Stock are subject to and qualified by the rights of the holders of the Preferred Stock of any series as may be designated by the Board of Directors upon any issuance of the Preferred Stock of any series.

2. Voting. The holders of the Common Stock shall have voting rights at all meetings of stockholders, each such holder being entitled to one vote for each share thereof held by such holder, provided, however, that, except as otherwise required by law, holders of Common Stock shall not be entitled to vote on any amendment to this Restated Certificate of Incorporation (which, as used herein, shall mean the certificate of incorporation of the Corporation, as amended from time to time, including the terms of any certificate of designations of any series of Preferred Stock) that relates solely to the terms of one or more outstanding series of Preferred Stock if the holders of such affected series are entitled, either separately or together as a class with the holders of one or more other such series, to vote thereon pursuant to this Restated Certificate of Incorporation. There shall be no cumulative voting.

The number of authorized shares of Common Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote of the holders of a majority of the stock of the Corporation entitled to vote, irrespective of the provisions of Section 242(b)(2) of the General Corporation Law of the State of Delaware.

3. Dividends. Dividends may be declared and paid on the Common Stock from funds lawfully available therefor as and when determined by the Board of Directors and subject to any preferential dividend or other rights of any then outstanding Preferred Stock.

4. Liquidation. Upon the dissolution or liquidation of the Corporation, whether voluntary or involuntary, holders of Common Stock will be entitled to receive all assets of the Corporation available for distribution to its stockholders, subject to any preferential or other rights of any then outstanding Preferred Stock.

B PREFERRED STOCK.

Preferred Stock may be issued from time to time in one or more series, each of such series to have such terms as stated or expressed herein and in the resolution or resolutions providing for the issue of such series adopted by the Board of Directors of the Corporation as hereinafter provided. Any shares of Preferred Stock that may be redeemed, purchased or acquired by the Corporation may be reissued except as otherwise provided by law.

Authority is hereby expressly granted to the Board of Directors from time to time to issue the Preferred Stock in one or more series, and in connection with the creation of any such series, by adopting a resolution or resolutions providing for the issuance of the shares thereof and by filing a certificate of designations relating thereto in accordance with the General Corporation Law of the State of Delaware, to determine and fix the number of shares of such series and such voting powers, full or limited, or no voting powers, and such designations, preferences and relative participating, optional or other special rights, and qualifications, limitations or restrictions thereof, including dividend rights, conversion rights, redemption privileges and liquidation preferences, as shall be stated and expressed in such resolutions, all to the full extent now or hereafter permitted by the General Corporation Law of the State of Delaware. Without limiting the generality of the foregoing, the resolutions providing for issuance of any series of Preferred Stock may provide that such series shall be superior or rank equally or be junior to any other series of Preferred Stock to the extent permitted by law.

The number of authorized shares of Preferred Stock may be increased or decreased (but not below the number of shares then outstanding) by the affirmative vote of the holders of a majority of the voting power of the capital stock of the Corporation entitled to vote thereon, voting as a single class, irrespective of the provisions of Section 242(b)(2) of the General Corporation Law of the State of Delaware.

FIFTH: Except as otherwise provided herein, the Corporation reserves the right to amend, alter, change or repeal any provision contained in this Restated Certificate of Incorporation, in the manner now or hereafter prescribed by statute and this Restated Certificate of Incorporation, and all rights conferred upon stockholders herein are granted subject to this reservation.

SIXTH: In furtherance and not in limitation of the powers conferred upon it by the General Corporation Law of the State of Delaware, and subject to the terms of any series of Preferred Stock, the Board of Directors shall have the power to adopt, amend, alter or repeal the By-laws of the Corporation by the affirmative vote of a majority of the directors present at any regular or special meeting of the Board of Directors at which a quorum is present. The stockholders may not adopt, amend, alter or repeal the By-laws of the Corporation, or adopt any provision inconsistent therewith, unless such action is approved, in addition to any other vote required by this Restated Certificate of Incorporation, by the affirmative vote of the holders of at least seventy-five percent (75%) of the votes that all the stockholders would be entitled to cast in an election of directors or class of directors. Notwithstanding any other provisions of law, this Restated Certificate of Incorporation or the By-laws of the Corporation, and notwithstanding the fact that a lesser percentage may be specified by law, the affirmative vote of the holders of at least seventy-five percent (75%) of the votes that all the stockholders would be entitled to cast in an election of directors or class of directors shall be required to amend or repeal, or to adopt any provision inconsistent with, this Article SIXTH.

SEVENTH: Except to the extent that the General Corporation Law of the State of Delaware prohibits the elimination or limitation of liability of directors for breaches of fiduciary duty, no director of the Corporation shall be personally liable to the Corporation or its stockholders for monetary damages for any breach of fiduciary duty as a director, notwithstanding any provision of law imposing such liability. No amendment to or repeal of this provision shall apply to or have any effect on the liability or alleged liability of any director of the Corporation for or with respect to any acts or omissions of such director occurring prior to such amendment or repeal. If the General Corporation Law of the State of Delaware is amended to permit further elimination or limitation of the personal liability of directors, then the liability of a director of the Corporation shall be eliminated or limited to the fullest extent permitted by the General Corporation Law of the State of Delaware as so amended.

EIGHTH: The Corporation shall provide indemnification as follows:

1. Actions, Suits and Proceedings Other than by or in the Right of the Corporation. The Corporation shall indemnify each person who was or is a party or threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the Corporation) by reason of the fact that he or she is or was, or has agreed to become, a director or officer of the

Corporation, or is or was serving, or has agreed to serve, at the request of the Corporation, as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise (including any employee benefit plan) (all such persons being referred to hereafter as an "Indemnitee"), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees), liabilities, losses, judgments, fines, excise taxes and penalties arising under the Employee Retirement Income Security Act of 1974, and amounts paid in settlement actually and reasonably incurred by or on behalf of Indemnitee in connection with such action, suit or proceeding and any appeal therefrom, if Indemnitee acted in good faith and in a manner that Indemnitee reasonably believed to be in, or not opposed to, the best interests of the Corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful. The termination of any action, suit or proceeding by judgment, order, settlement, conviction or upon a plea of nolo contendere or its equivalent, shall not, of itself, create a presumption that Indemnitee did not act in good faith and in a manner that Indemnitee reasonably believed to be in, or not opposed to, the best interests of the Corporation, and, with respect to any criminal action or proceeding, had reasonable cause to believe that his or her conduct was unlawful.

2. Actions or Suits by or in the Right of the Corporation. The Corporation shall indemnify any Indemnitee who was or is a party to or threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the Corporation to procure a judgment in its favor by reason of the fact that Indemnitee is or was, or has agreed to become, a director or officer of the Corporation, or is or was serving, or has agreed to serve, at the request of the Corporation, as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise (including any employee benefit plan), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees) and, to the extent permitted by law, amounts paid in settlement actually and reasonably incurred by or on behalf of Indemnitee in connection with such action, suit or proceeding and any appeal therefrom, if Indemnitee acted in good faith and in a manner that Indemnitee reasonably believed to be in, or not opposed to, the best interests of the Corporation, except that no indemnification shall be made under this Section 2 in respect of any claim, issue or matter as to which Indemnitee shall have been adjudged to be liable to the Corporation, unless, and only to the extent, that the Court of Chancery of Delaware or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of such liability but in view of all the circumstances of the case, Indemnitee is fairly and reasonably entitled to indemnity for such expenses (including attorneys' fees) that the Court of Chancery of Delaware or such other court shall deem proper.

3. Indemnification for Expenses of Successful Party. Notwithstanding any other provisions of this Article EIGHTH, to the extent that an Indemnitee has been successful, on the merits or otherwise, in defense of any action, suit or proceeding referred to in Sections 1 and 2 of this Article EIGHTH, or in defense of any claim, issue or matter therein, or on appeal from any such action, suit or proceeding, Indemnitee shall be indemnified against all expenses (including attorneys' fees) actually and reasonably incurred by or on behalf of Indemnitee in connection therewith. Without limiting the foregoing, Indemnitee shall be considered for the purposes hereof to have been wholly successful with respect to any action, suit or proceeding, or in defense of any claim, issue or matter therein or any appeal therefrom, that is disposed of, on the merits or otherwise (including a disposition without prejudice), without (i) the disposition being adverse to Indemnitee, (ii) an adjudication that Indemnitee was liable to the Corporation, (iii) a plea of guilty or nolo contendere by Indemnitee, (iv) an adjudication that Indemnitee did not act in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the Corporation, and (v) with respect to any criminal proceeding, an adjudication that Indemnitee had reasonable cause to believe his or her conduct was unlawful.

4. Notification and Defense of Claim. As a condition precedent to an Indemnitee's right to be indemnified, such Indemnitee must notify the Corporation in writing as soon as practicable of any action, suit, proceeding or investigation involving such Indemnitee for which indemnity will or could be sought. With respect to any action, suit, proceeding or investigation of which the Corporation is so notified, the Corporation will be entitled to participate therein at its own expense and/or to assume the defense thereof at its own expense, with legal counsel reasonably acceptable to Indemnitee. After notice from the Corporation to Indemnitee of its election so to assume such defense, the Corporation shall not be liable to Indemnitee for any legal or other expenses subsequently incurred by Indemnitee in connection with such action, suit, proceeding or investigation, other than as provided below in this Section 4. Indemnitee shall have the right to employ his or her own counsel in connection with such action, suit, proceeding or investigation, but the fees and expenses of such counsel incurred after notice from the Corporation of its assumption of the defense thereof shall be at the expense of Indemnitee unless (i) the employment of counsel by Indemnitee has been authorized by the Corporation, (ii) counsel to Indemnitee shall have reasonably concluded that there may be a conflict of interest or position on any significant issue between the Corporation and Indemnitee in the conduct of the defense of such action, suit, proceeding or investigation or (iii) the Corporation shall not in fact have employed counsel to assume the defense of such action, suit, proceeding or investigation, in each of which cases the fees and expenses of counsel for Indemnitee shall be at the expense of the Corporation, except as otherwise expressly provided by this Article EIGHTH. The Corporation shall not be entitled, without the consent of Indemnitee, to assume the defense of any claim brought by or in the right of the Corporation or as to which counsel for Indemnitee shall have reasonably made the conclusion provided for in clause (ii) above. The Corporation shall not be required to indemnify Indemnitee under this Article EIGHTH for any amounts paid in settlement of any action, suit, proceeding or investigation effected without its written consent. The Corporation shall not settle any action, suit, proceeding or investigation in any manner that would impose any penalty or limitation on Indemnitee without Indemnitee's written consent. Neither the Corporation nor Indemnitee will unreasonably withhold or delay its consent to any proposed settlement.

5. Advancement of Expenses. Subject to the provisions of Section 6 of this Article EIGHTH, in the event of any threatened or pending action, suit, proceeding or investigation of which the Corporation receives notice under this Article EIGHTH, any expenses (including attorneys' fees) incurred by or on behalf of Indemnitee in defending an action, suit, proceeding or investigation or any appeal therefrom shall be paid by the Corporation in advance of the final disposition of such matter; provided, however, that the payment of such expenses incurred by or on behalf of Indemnitee in advance of the final disposition of such matter shall be made only upon receipt of an undertaking by or on behalf of Indemnitee to repay all amounts so advanced in the event that it shall ultimately be determined by final judicial decision from which there is no further right to appeal that Indemnitee is not entitled to be indemnified by the Corporation as authorized in this Article EIGHTH; and provided further that no such advancement of expenses shall be made under this Article EIGHTH if it is determined (in the manner described in Section 6) that (i) Indemnitee did not act in good faith and in a manner he or she reasonably believed to be in, or not opposed to, the best interests of the Corporation, or (ii) with respect to any criminal action or proceeding, Indemnitee had reasonable cause to believe his or her conduct was unlawful. Such undertaking shall be accepted without reference to the financial ability of Indemnitee to make such repayment.

6. Procedure for Indemnification and Advancement of Expenses. In order to obtain indemnification or advancement of expenses pursuant to Section 1, 2, 3 or 5 of this Article EIGHTH, an Indemnitee shall submit to the Corporation a written request. Any such advancement of expenses shall be made promptly, and in any event within 60 days after receipt by the Corporation of the written request of Indemnitee, unless (i) the Corporation has assumed the defense pursuant to Section 4 of this Article EIGHTH (and none of the circumstances described in Section 4 of this Article EIGHTH that would nonetheless entitle the Indemnitee to indemnification for the fees and expenses of separate counsel have occurred) or (ii) the Corporation determines within such 60-day period that Indemnitee did not meet the applicable standard of conduct set forth in Section 1, 2 or 5 of this Article EIGHTH, as the case may be. Any such indemnification, unless ordered by a court, shall be made with respect to requests under Section 1 or 2 only as authorized in the specific case upon a determination by the Corporation that the indemnification of Indemnitee is proper because Indemnitee has met the applicable standard of conduct set forth in Section 1 or 2, as the case may be. Such determination shall be made in each instance (a) by a majority vote of the directors of the Corporation consisting of persons who are not at that time parties to the action, suit or proceeding in question ("disinterested directors"), whether or not a quorum, (b) by a committee of disinterested directors designated by majority vote of disinterested directors, whether or not a quorum, (c) if there are no disinterested directors, or if the disinterested directors so direct, by independent legal counsel (who may, to the extent permitted by law, be regular legal counsel to the Corporation) in a written opinion, or (d) by the stockholders of the Corporation.

7. Remedies. The right to indemnification or advancement of expenses as granted by this Article EIGHTH shall be enforceable by Indemnitee in any court of competent jurisdiction. Neither the failure of the Corporation to have made a determination prior to the commencement of such action that indemnification is proper in the circumstances because Indemnitee has met the applicable standard of conduct, nor an actual determination by the Corporation pursuant to Section 6 of this Article EIGHTH that Indemnitee has not met such applicable standard of conduct, shall be a defense to the action or create a presumption that

Indemnitee has not met the applicable standard of conduct. In any suit brought by Indemnitee to enforce a right to indemnification, or brought by the Corporation to recover an advancement of expenses pursuant to the terms of an undertaking, the Corporation shall have the burden of proving that Indemnitee is not entitled to be indemnified, or to such advancement of expenses, under this Article EIGHTH. Indemnitee's expenses (including attorneys' fees) reasonably incurred in connection with successfully establishing Indemnitee's right to indemnification, in whole or in part, in any such proceeding shall also be indemnified by the Corporation. Notwithstanding the foregoing, in any suit brought by Indemnitee to enforce a right to indemnification hereunder it shall be a defense that the Indemnitee has not met any applicable standard for indemnification set forth in the General Corporation Law of the State of Delaware.

8. Limitations. Notwithstanding anything to the contrary in this Article EIGHTH, except as set forth in Section 7 of this Article EIGHTH, the Corporation shall not indemnify an Indemnitee pursuant to this Article EIGHTH in connection with a proceeding (or part thereof) initiated by such Indemnitee unless the initiation thereof was approved by the Board of Directors of the Corporation. Notwithstanding anything to the contrary in this Article EIGHTH, the Corporation shall not indemnify an Indemnitee to the extent such Indemnitee is reimbursed from the proceeds of insurance, and in the event the Corporation makes any indemnification payments to an Indemnitee and such Indemnitee is subsequently reimbursed from the proceeds of insurance, such Indemnitee shall promptly refund indemnification payments to the Corporation to the extent of such insurance reimbursement.

9. Subsequent Amendment. No amendment, termination or repeal of this Article EIGHTH or of the relevant provisions of the General Corporation Law of the State of Delaware or any other applicable laws shall adversely affect or diminish in any way the rights of any Indemnitee to indemnification under the provisions hereof with respect to any action, suit, proceeding or investigation arising out of or relating to any actions, transactions or facts occurring prior to the final adoption of such amendment, termination or repeal.

10. Other Rights. The indemnification and advancement of expenses provided by this Article EIGHTH shall not be deemed exclusive of any other rights to which an Indemnitee seeking indemnification or advancement of expenses may be entitled under any law (common or statutory), agreement or vote of stockholders or disinterested directors or otherwise, both as to action in Indemnitee's official capacity and as to action in any other capacity while holding office for the Corporation, and shall continue as to an Indemnitee who has ceased to be a director or officer, and shall inure to the benefit of the estate, heirs, executors and administrators of Indemnitee. Nothing contained in this Article EIGHTH shall be deemed to prohibit, and the Corporation is specifically authorized to enter into, agreements with officers and directors providing indemnification rights and procedures different from those set forth in this Article EIGHTH. In addition, the Corporation may, to the extent authorized from time to time by its Board of Directors, grant indemnification rights to other employees or agents of the Corporation or other persons serving the Corporation and such rights may be equivalent to, or greater or less than, those set forth in this Article EIGHTH.

11. Partial Indemnification. If an Indemnitee is entitled under any provision of this Article EIGHTH to indemnification by the Corporation for some or a portion of the expenses (including attorneys' fees), liabilities, losses, judgments, fines (including excise taxes and

penalties arising under the Employee Retirement Income Security Act of 1974) or amounts paid in settlement actually and reasonably incurred by or on behalf of Indemnitee in connection with any action, suit, proceeding or investigation and any appeal therefrom but not, however, for the total amount thereof, the Corporation shall nevertheless indemnify Indemnitee for the portion of such expenses (including attorneys' fees), liabilities, losses, judgments, fines (including excise taxes and penalties arising under the Employee Retirement Income Security Act of 1974) or amounts paid in settlement to which Indemnitee is entitled.

12. Insurance. The Corporation may purchase and maintain insurance, at its expense, to protect itself and any director, officer, employee or agent of the Corporation or another corporation, partnership, joint venture, trust or other enterprise (including any employee benefit plan) against any expense, liability or loss incurred by him or her in any such capacity, or arising out of his or her status as such, whether or not the Corporation would have the power to indemnify such person against such expense, liability or loss under the General Corporation Law of the State of Delaware.

13. Savings Clause. If this Article EIGHTH or any portion hereof shall be invalidated on any ground by any court of competent jurisdiction, then the Corporation shall nevertheless indemnify each Indemnitee as to any expenses (including attorneys' fees), liabilities, losses, judgments, fines (including excise taxes and penalties arising under the Employee Retirement Income Security Act of 1974) and amounts paid in settlement in connection with any action, suit, proceeding or investigation, whether civil, criminal or administrative, including an action by or in the right of the Corporation, to the fullest extent permitted by any applicable portion of this Article EIGHTH that shall not have been invalidated and to the fullest extent permitted by applicable law.

14. Definitions. Terms used herein and defined in Section 145(h) and Section 145(i) of the General Corporation Law of the State of Delaware shall have the respective meanings assigned to such terms in such Section 145(h) and Section 145(i).

NINTH: This Article NINTH is inserted for the management of the business and for the conduct of the affairs of the Corporation.

1. General Powers. The business and affairs of the Corporation shall be managed by or under the direction of the Board of Directors.

2. Number of Directors; Election of Directors. Subject to the rights of holders of any series of Preferred Stock to elect directors, the number of directors of the Corporation shall be established by the Board of Directors. Election of directors need not be by written ballot, except as and to the extent provided in the By-laws of the Corporation.

3. Classes of Directors. Subject to the rights of holders of any series of Preferred Stock to elect directors, the Board of Directors shall be and is divided into three classes, designated Class I, Class II and Class III. Each class shall consist, as nearly as may be possible, of one-third of the total number of directors constituting the entire Board of Directors. The Board of Directors is authorized to assign members of the Board of Directors already in office to Class I, Class II or Class III at the time such classification becomes effective.

4. Terms of Office. Subject to the rights of holders of any series of Preferred Stock to elect directors, each director shall serve for a term ending on the date of the third annual meeting of stockholders following the annual meeting of stockholders at which such director was elected; provided that each director initially assigned to Class I shall serve for a term expiring at the Corporation's first annual meeting of stockholders held after the effectiveness of this Restated Certificate of Incorporation; each director initially assigned to Class II shall serve for a term expiring at the Corporation's second annual meeting of stockholders held after the effectiveness of this Restated Certificate of Incorporation; and each director initially assigned to Class III shall serve for a term expiring at the Corporation's third annual meeting of stockholders held after the effectiveness of this Restated Certificate of Incorporation; provided further, that the term of each director shall continue until the election and qualification of his or her successor and be subject to his or her earlier death, resignation or removal.

5. Quorum. The greater of (a) a majority of the directors at any time in office and (b) one-third of the number of directors fixed pursuant to Section 2 of this Article NINTH shall constitute a quorum of the Board of Directors. If at any meeting of the Board of Directors there shall be less than such a quorum, a majority of the directors present may adjourn the meeting from time to time without further notice other than announcement at the meeting, until a quorum shall be present.

6. Action at Meeting. Every act or decision done or made by a majority of the directors present at a meeting duly held at which a quorum is present shall be regarded as the act of the Board of Directors unless a greater number is required by law or by this Restated Certificate of Incorporation.

7. Removal. Subject to the rights of holders of any series of Preferred Stock, directors of the Corporation may be removed only for cause and only by the affirmative vote of the holders of at least seventy-five percent (75%) of the votes that all the stockholders would be entitled to cast in an election of directors or class of directors.

8. Vacancies. Subject to the rights of holders of any series of Preferred Stock, any vacancies or newly-created directorships in the Board of Directors, however occurring, shall be filled only by vote of a majority of the directors then in office, although less than a quorum, or by a sole remaining director and shall not be filled by the stockholders. A director elected to fill a vacancy or to fill a position resulting from a newly-created directorship shall hold office until the next election of the class for which such director shall have been chosen, subject to the election and qualification of a successor and to such director's earlier death, resignation or removal.

9. Stockholder Nominations and Introduction of Business, Etc. Advance notice of stockholder nominations for election of directors and other business to be brought by stockholders before a meeting of stockholders shall be given in the manner provided by the By-laws of the Corporation.

10. Amendments to Article. Notwithstanding any other provisions of law, this Restated Certificate of Incorporation or the By-laws of the Corporation, and notwithstanding the fact that a lesser percentage maybe specified by law, the affirmative vote of the holders of at

least seventy-five percent (75%) of the votes that all the stockholders would be entitled to cast in an election of directors or class of directors shall be required to amend or repeal, or to adopt any provision inconsistent with, this Article NINTH.

TENTH: Stockholders of the Corporation may not take any action by written consent in lieu of a meeting. Notwithstanding any other provisions of law, this Restated Certificate of Incorporation or the By-laws of the Corporation, and notwithstanding the fact that a lesser percentage may be specified by law, the affirmative vote of the holders of at least seventy-five percent (75%) of the votes that all the stockholders would be entitled to cast in an election of directors or class of directors shall be required to amend or repeal, or to adopt any provision inconsistent with, this Article TENTH.

ELEVENTH: Special meetings of stockholders for any purpose or purposes may be called at any time by the Board of Directors, the Chairman of the Board or the Chief Executive Officer, but such special meetings may not be called by any other person or persons. Business transacted at any special meeting of stockholders shall be limited to matters relating to the purpose or purposes stated in the notice of meeting. Notwithstanding any other provisions of law, this Restated Certificate of Incorporation or the By-laws of the Corporation, and notwithstanding the fact that a lesser percentage maybe specified by law, the affirmative vote of the holders of at least seventy-five percent (75%) of the votes that all the stockholders would be entitled to cast in an election of directors or class of directors shall be required to amend or repeal, or to adopt any provision inconsistent with, this Article ELEVENTH.

IN WITNESS WHEREOF, this Restated Certificate of Incorporation, which restates, integrates and amends the certificate of incorporation of the Corporation, and which has been duly adopted in accordance with Sections 228, 242 and 245 of the General Corporation Law of the State of Delaware, has been executed by its duly authorized officer on _____, 2012.

STEMLINE THERAPEUTICS, INC.

By: _____

Name: Ivan Bergstein, M.D.

Title: President and Chief Executive Officer

CERTIFICATE OF AMENDMENT
TO
SECOND AMENDED AND RESTATED CERTIFICATE OF INCORPORATION
OF
STEMLINE THERAPEUTICS, INC.

Stemline Therapeutics, Inc. (the "Corporation"), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the "DGCL"), does hereby certify:

Pursuant to Section 242 of the DGCL, the Board of Directors of the Corporation (the "Board"), at a meeting of the Board held on July 13, 2012, duly adopted resolutions approving an amendment to the Second Amended and Restated Certificate of Incorporation of the Corporation and declared said amendment to be advisable. The stockholders of the Corporation duly approved said amendment by written consent in accordance with Sections 228 and 242 of the DGCL. As required by Section 228 of the DGCL, the Corporation has given written notice of the amendment reflected herein to the stockholders of the Corporation who did not consent in writing to such amendment. The resolutions provide that the Second Amended and Restated Certificate of Incorporation of the Corporation filed on March 16, 2010 with the Secretary of State of the State of Delaware (the "Delaware Secretary"), and amended on March 15, 2012, be further amended as follows:

Striking out the first paragraph of Article FOURTH and substituting in lieu of said paragraph of Article FOURTH the following new paragraphs:

"**FOURTH.** The total number of shares of all classes of stock which the Corporation shall have authority to issue is (i) 45,000,000 shares of Common Stock, \$0.0001 par value per share ("Common Stock") and (ii) 10,000,000 shares of Preferred Stock, \$0.0001 par value per share ("Preferred Stock").

Effective upon the filing of this Certificate of Amendment with the Delaware Secretary, there shall be a split of the Common Stock, such that immediately upon such filing every one (1) share of Common Stock issued and outstanding immediately prior to such filing shall be exchanged for 3.6141 shares of Common Stock, remaining at \$0.0001 par value per share.

Upon the filing hereof with the Delaware Secretary, the exchange of every one (1) issued and outstanding share of Common Stock for 3.6141 issued and outstanding shares of Common Stock shall occur 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.

No fractional shares shall be issued upon the exchange. Cash will be paid in lieu of fractional shares except as to holders who have agreed to waive such payment."

IN WITNESS WHEREOF, this Certificate of Amendment has been signed by the President of the Corporation this 16th day of July 2012.

STEMLINE THERAPEUTICS, INC.

By: /s/ Ivan Bergstein, M.D.

Name: Ivan Bergstein, M.D.

Title: Chairman, President and CEO

AMENDMENT

Reference is made to the Senior Unsecured Convertible Note issued to **NB Athyrium LLC** (the “Noteholder”) by **Stemline Therapeutics, Inc.** (the “Company”), dated March 16, 2010 (the “Note”). Terms used but not defined herein shall have the meanings assigned to them in the Note.

The Company has filed a Registration Statement on Form S-1 with respect to a proposed initial public offering (“IPO”) of its common stock (the “Common Stock”).

The undersigned agree as follows:

1. Section 3(b) of the Note is amended to permit conversion of less than all of the Note.
2. Upon the closing of the IPO, NB Athyrium LLC agrees to convert 50% of the principal and accrued amount of its Note at the price to public per share on the cover of the final prospectus, and pursuant to Section 3(d) of the Note accelerates 50% of the principal and accrued interest of its Note upon closing of the IPO.
3. The shares resulting from this optional conversion will not be subject to any lockup.
4. The Company will reimburse NB Athyrium LLC for any out of pocket legal expenses it may have, up to a \$25,000.00 cap.
5. The Company will assist NB Athyrium LLC and cooperate with the removal of the “restricted” stock legend as soon as the lockup applicable to all the other shares of common stock of the Company beneficially owned by NB Athyrium expires.

IN WITNESS WHEREOF, the Parties hereto have executed this Amendment as of July 26, 2012.

STEMLINE THERAPEUTICS, INC.

By: /s/ Ivan Bergstein
Ivan Bergstein, M.D.
President and Chief Executive Officer

NB ATHYRIUM LLC

By its managing member, NB SOF II Holdings (D) LP
By its general partner, NB Secondary Opportunities Associates II LP
By its general partner, NB Secondary Opportunities Associates II GP LLC

By: /s/ Christian Neira
Name: Christian Neira
Title: Authorized Signatory

Letter Agreement

John T. Cavan
12 E. Elbrook Drive
Allendale, New Jersey 07401

Dear John:

Reference is made to your offer letter dated March 27, 2012 (the "Offer Letter") to join Stemline Therapeutics, Inc. (the "Company"). As we have discussed, we would like to make certain changes to the vesting schedule set forth in the Offer Letter.

Specifically, Section 1.E.(i) of the Offer Letter is hereby amended to read as follows:

"E. Options. Subject to the approval of the Board, you will be granted the following award of options, which in the aggregate will constitute 0.75% of the Company's Fully Diluted Capital Stock as of the date of approval by the Board:

(i) an option (the "Time-Vested Option") to purchase that number of shares of the Company's Common Stock, \$0.0001 par value per share (the "Common Stock"), equal to 0.5% of the Company's Fully Diluted Capital Stock as of the date of approval by the Board, at a purchase price per share equal to the fair market value of the Company's Common Stock on the date of approval by the Board. The Time-Vested Option will vest and become exercisable as to 25% of the shares at the closing of the initial public offering (the "Closing") if you are then employed as chief accounting officer ("CAO"); 25% on the one-year anniversary of the Closing if you are employed as CAO as of the Closing; 25% on the two-year anniversary of the Closing if you are still providing services to the Company as an employee, no matter what title, or a consultant as of such date; and 25% on the three-year anniversary of the Closing if you are still providing services to the Company as employee, no matter what title, or a consultant as of such date."

Except as amended by this Letter Agreement, the Offer Letter remains in full force and effect.

Very truly yours,

STEMLINE THERAPEUTICS, INC.

By: /s/ Ivan Bergstein, M.D.
Name: Ivan Bergstein, M.D.
Title: President and Chief Executive Officer

JOHN T. CAVAN

/s/ John T. Cavan
(Signature)

Date: July 26, 2012
