

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM S-8
REGISTRATION STATEMENT UNDER
THE SECURITIES ACT OF 1933

CYTORI THERAPEUTICS, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction
of incorporation or organization)

33-0827593
(I.R.S. Employer Identification No.)

3020 Callan Road
San Diego, CA 92121
(Address of principal executive offices, including zip code)

2011 EMPLOYEE STOCK PURCHASE PLAN

(Full title of the plan)

Christopher J. Calhoun
Chief Executive Officer
Cytori Therapeutics, Inc.
3020 Callan Road
San Diego, CA 92121
(858) 458-0900
(Name, address and telephone number of agent for service)

Copy to:
Jeffrey T. Baglio
DLA Piper LLP (US)
4365 Executive Drive, Suite 1100
San Diego, CA 92121

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. (Check one):

Large Accelerated Filer

Accelerated Filer

Non-Accelerated Filer
(Do not check if a smaller reporting company)

Smaller reporting company

CALCULATION OF REGISTRATION FEE

Title of Securities to be Registered	Amount to be Registered(1)	Proposed Maximum Offering Price per Share (2)	Proposed Maximum Aggregate Offering Price (2)	Amount of Registration Fee
Common Stock, par value \$0.001 per share	500,000	\$ 1.91	\$ 955,000	\$ 110

(1) This registration statement shall also cover an indeterminate number of shares that may be necessary to adjust the number of shares reserved for issuance pursuant to the 2011 Employee Stock Purchase Plan (“**2011 ESPP**”) by reason of any stock split, stock dividend or similar adjustment effected without the registrant’s receipt of consideration that results in an increase in the number of the registrant’s outstanding shares of common stock.

(2) This estimate is made pursuant to Rule 457(h) of the Securities Act of 1933 solely for purposes of calculating the registration fee, and is based on 90% of \$2.12, the average of the high and low prices of the registrant’s common stock as reported on the NASDAQ Global Market on May 23, 2012. Pursuant to the 2011 ESPP, which plan is incorporated by reference herein, the purchase price of the shares of common stock will generally be 90% of the lower of the fair market value of the common stock on the first trading day of the offering period or on the last day of the offering period.

This registration statement shall become effective upon filing in accordance with Rule 462 under the Securities Act of 1933.

PART I

INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS

The documents containing the information specified in Part I of Form S-8 will be sent or given to employees as specified by Securities and Exchange Commission (the "Commission") Rule 428(b)(1). Such documents need not be filed with the Commission either as part of this registration statement or as prospectuses or prospectus supplements pursuant to Rule 424. These documents and the documents incorporated by reference in this registration statement pursuant to Item 3 of Form S-8 (Part II hereof), taken together, constitute a prospectus that meets the requirements of Section 10(a) of the Securities Act of 1933, as amended (the "Securities Act"). In this registration statement, unless the context otherwise requires, the terms "Company," "we," "us," and "our," refer to Cytori Therapeutics, Inc. and its subsidiaries on a consolidated basis.

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference.

The following documents filed by us with the Commission are incorporated by reference in this registration statement:

- (a) Our latest annual report on Form 10-K for the fiscal year ended December 31, 2011;
- (b) All other reports filed by us with the Commission pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act") since the end of the fiscal year covered by the annual report referred to in (a) above; and
- (c) the description of our common stock contained in our registration statement on Form 10/A filed with the Commission on July 16, 2001 (File No. 000-32501-1682501).

All documents subsequently filed by us pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act, prior to the filing of a post-effective amendment which indicates that all securities offered hereby have been sold or which deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference in this registration statement and to be part hereof from the date of filing such documents.

For the purposes of this registration statement, any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded to the extent that a statement contained herein or in any other subsequently filed document which also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this registration statement.

Under no circumstances will any information filed under Items 2.02 or 7.01 of Form 8-K be deemed incorporated herein by reference unless such Form 8-K expressly provides to the contrary.

You may request a copy of these filings, at no cost, by writing or telephoning us at:

3020 Callan Road
San Diego, CA 92121
Telephone: (858) 458-0900
Attn: Investor Relations

You should rely only on the information provided or incorporated by reference in this registration statement or any related prospectus. We have not authorized anyone to provide you with different information. You should not assume that the information in this registration statement or any related prospectus is accurate as of any date other than the date on the front of the document.

Item 4. Description of Securities.

Not applicable.

Item 5. Interests of Named Experts and Counsel.

Not applicable.

Item 6. Indemnification of Directors and Officers.

Section 145 of the Delaware General Corporation Law authorizes a court to award or a corporation's board of directors to grant indemnification to directors and officers in terms sufficiently broad to permit such indemnification under certain circumstances for liabilities (including reimbursement for expenses incurred) arising under the Securities Act.

Our amended and restated certificate of incorporation, or our Certificate, includes a provision that, to the fullest extent permitted by the Delaware General Corporation Law, eliminates the personal liability of our directors for monetary damages for breach of fiduciary duty as a director. In addition, together our Certificate and our bylaws, as amended, require us to indemnify, to the fullest extent permitted by law, any person made or threatened to be made a party to an action or proceeding (whether criminal, civil, administrative or investigative) by reason of the fact that such person is or was a director, officer or employee of Cytori or any predecessor of ours, or serves or served at any other enterprise as a director, officer or employee at our request or the request of any predecessor of ours, against expenses (including attorneys' fees), judgments, fines, settlements and other amounts actually and reasonably incurred in connection with any proceeding, arising by reason of the fact that such person is or was an agent of ours. Our bylaws also provide that we may, to the fullest extent provided by law, indemnify any person against expenses (including attorneys' fees), judgments, fines, settlements and other amounts actually and reasonably incurred in connection with any proceeding, arising by reason of the fact that such person is or was an agent of ours. We are required to advance expenses incurred by our directors, officers, employees and agents in defending any action or proceeding for which indemnification is required or permitted, subject to certain limited exceptions. The indemnification rights conferred by our bylaws are not exclusive.

We have obtained directors and officers liability insurance.

Item 7. Exemption from Registration Claimed.

Not applicable.

Item 8. Exhibits.

See Index to Exhibits below.

Item 9. Undertakings.

(a) 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 this 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 this registration statement. Notwithstanding the foregoing, any increase or decrease in the 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 a 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 percent change in the maximum aggregate price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

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

Provided, however, that paragraphs (a)(1)(i) and (a)(1)(ii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Exchange Act that are incorporated by reference in this registration statement.

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

(b) The undersigned registrant hereby further undertakes that, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Exchange Act (and, where applicable, each filing of any employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in this registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at the time shall be deemed to be the initial *bona fide* offering thereof.

(c) 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 provisions summarized in Item 6 above, or otherwise, the registrant has been advised that in the opinion of the 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.

* * *

SIGNATURES

Pursuant to the requirements of the Securities Act, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the city of San Diego, state of California, on this 30th day of May, 2012.

CYTORI THERAPEUTICS, INC.

By: /s/ Christopher J. Calhoun
Christopher J. Calhoun
Chief Executive Officer

POWER OF ATTORNEY

Each director and/or officer of CYTORI THERAPEUTICS, INC. whose signature appears below constitutes and appoints Christopher J. Calhoun and Mark E. Saad, and each of them, as such person's true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for such person and in such person's name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Commission granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as such person might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them, or their substitute or substitutes, may lawfully do or cause to be done by virtue of this Power of Attorney.

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

<u>SIGNATURE</u>	<u>TITLE</u>	<u>DATE</u>
<u>/s/ Lloyd H. Dean</u> Lloyd H. Dean	<i>Chairman of the Board of Directors</i>	May 30, 2012
<u>/s/ Christopher J. Calhoun</u> Christopher J. Calhoun	<i>Chief Executive Officer, Vice-Chairman, Director (Principal Executive Officer)</i>	May 30, 2012
<u>/s/ Marc H. Hedrick, MD</u> Marc H. Hedrick, MD	<i>President, Director</i>	May 30, 2012
<u>/s/ Mark E. Saad</u> Mark E. Saad	<i>Chief Financial Officer (Principal Financial Officer)</i>	May 30, 2012
<u>/s/ John W. Townsend</u> John W. Townsend	<i>Controller (Principal Accounting Officer)</i>	May 30, 2012
<u>/s/ Richard J. Hawkins</u> Richard J. Hawkins	<i>Director</i>	May 30, 2012
<u>/s/ Paul W. Hawran</u> Paul W. Hawran	<i>Director</i>	May 30, 2012
<u>/s/ Ronald D. Henriksen</u> Ronald D. Henriksen	<i>Director</i>	May 30, 2012
<u>/s/ E. Carmack Holmes, MD</u> E. Carmack Holmes, MD	<i>Director</i>	May 30, 2012
<u>/s/ David M. Rickey</u> David M. Rickey	<i>Director</i>	May 30, 2012
<u>/s/ Tommy G. Thompson</u> Tommy G. Thompson	<i>Director</i>	May 30, 2012

INDEX TO EXHIBITS

Exhibit Number	Exhibit Title	Filed with this Form S-8	Incorporated by Reference		
			Form	File No.	Date Filed
4.1	Amended and Restated Certificate of Incorporation.		10-Q	000-32501 Exhibit 3.1	08/13/2002
4.2	Amended and Restated Bylaws of Cytori Therapeutics, Inc.		10-Q	000-32501 Exhibit 3.2	08/14/2003
5.1	Opinion of DLA Piper LLP (US).	X			
23.1	Consent of KPMG LLP.	X			
23.2	Consent of DLA Piper LLP (US) (filed as a part of Exhibit 5.1).	X			
24.1	Power of Attorney (contained on signature page).	X			
99.1	2011 Employee Stock Purchase Plan.		DEF 14A	001-34375 Appendix A	05/02/2011

DLA Piper LLP (US)

4365 Executive Drive, Suite 1100

San Diego, California 92121-2133

T: (858) 677-1400

F: (858) 677-1401

www.dlapiper.com

May 30, 2012

Cytori Therapeutics, Inc.
3020 Callan Road
San Diego, California 92121

Ladies and Gentlemen:

We have acted as legal counsel for Cytori Therapeutics, Inc., a Delaware corporation (the "Company"), in connection with a Registration Statement on Form S-8 (the "Registration Statement") under the Securities Act of 1933, as amended (the "Securities Act" for the registration of 500,000 shares of the common stock, \$0.001 par value per share, of the Company (the "Shares") which may be granted under the Company's 2011 Employee Stock Purchase Plan (the "Plan").

In connection herewith, we have examined and relied without independent investigation as to matters of fact upon such certificates of public officials, such statements and certificates of officers of the Company and originals or copies certified to our satisfaction of the Registration Statement, the Plan, the Amended and Restated Certificate of Incorporation, and the Amended and Restated Bylaws of the Company as now in effect, and minutes of all pertinent meetings and actions of the Board of Directors of the Company.

In rendering this opinion, we have assumed the genuineness of all signatures on all documents examined by us, the due authority of the parties signing such documents, the authenticity of all documents submitted to us as originals, the conformity to the originals of all documents submitted to us as copies and that the offer and sale of the Shares complies in all respects with the terms, conditions and restrictions set forth in the Registration Statement and the Plan. The Company has represented to us and we have also assumed that the Company has reserved from its duly authorized capital stock a sufficient number of shares of common stock as were approved by the Company's stockholders for issuance under the Plan. We have also assumed that it will at all times reserve and keep available out of the aggregate of its authorized but unissued and otherwise unreserved common stock, solely for the purpose of enabling it to issue the Shares in accordance with the Plan, the number of Shares which are then issuable and deliverable upon the settlement of awards under the Plan.

We do not express any opinion herein concerning any law other than the laws of the State of California, Delaware General Corporation Law and the federal law of the United States. No opinion is expressed herein with respect to the qualification of the Shares under the securities or blue sky laws of any state or any foreign jurisdiction.

This opinion speaks only at and as of its date and is based solely on the facts and circumstances known to us and as of such date. In addition, in rendering this opinion, we assume no obligation to revise, update or supplement this opinion (i) should the present aforementioned laws be changed by legislative action, judicial decision or otherwise, or (ii) to reflect any facts or circumstances which may hereafter come to our attention.

Based upon, subject to and limited by the foregoing, we are of the opinion that the Shares have been duly authorized and, when and to the extent issued pursuant to the Plan upon receipt by the Company of the payment therefor, will be validly issued, fully paid and non-assessable.

We hereby consent to the filing of this opinion as Exhibit 5.1 to the Registration Statement. In giving this consent, we do not admit that we are within the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission promulgated thereunder.

Very truly yours,

/s/ DLA Piper LLP (US)

DLA PIPER LLP (US)

Consent of Independent Registered Public Accounting Firm

We consent to the use of our report dated March 12, 2012, with respect to the consolidated balance sheets of Cytori Therapeutics, Inc. and subsidiaries as of December 31, 2011 and 2010, and the related consolidated statements of operations and comprehensive loss, stockholders' equity (deficit), and cash flows for each of the years in the three-year period ended December 31, 2011, the accompanying schedule of valuation and qualifying accounts, and the effectiveness of internal control over financial reporting as of December 31, 2011, incorporated herein by reference.

/s/ KPMG LLP

San Diego, California

May 30, 2012
