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

FORM S-3

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

(IRS Employer Identification Number)

**3020 Callan Road
San Diego, CA
(858) 458-0900**

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

**Marc H. Hedrick, MD
President and Chief Executive Officer
Cytori Therapeutics, Inc.
3020 Callan Road
San Diego, CA 92121**

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

With a copy to:
**Jeffrey T. Baglio, Esq.
DLA Piper LLP (US)
4365 Executive Drive, Suite 1100
San Diego, CA 92121
Tel: (858) 677-1400
Fax: (858) 677-1401**

Approximate date of commencement of proposed sale to public: From time to time after the effective date of this Registration Statement as determined by the selling stockholder named in the prospectus contained herein.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

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, other than securities offered only in connection with dividend or interest reinvestment plans, 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, please 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 registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

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

Calculation of Registration Fee

Title of Each Class 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	4,032,389	\$ 0.50	\$ 1,996,033	\$ 232

- (1) In the event of a stock split, stock dividend or similar transaction involving our common stock, the number of shares registered shall automatically be increased to cover the additional shares of common stock issuable pursuant to Rule 416 under the Securities Act.
- (2) Estimated solely for purposes of calculating the registration fee pursuant to Rule 457(c) under the Securities Act of 1933, as amended based upon the average of the high and low prices for the registrant's common stock as reported on The NASDAQ Global Market on November 5, 2014.

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.

The information in this prospectus is not complete and may be changed. The selling stockholders may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED November 12, 2014

PROSPECTUS



**4,032,389 Shares of Common Stock
Issuable Upon Exercise of Outstanding Warrants**

The selling stockholders named in this prospectus are offering up to 4,032,389 shares of our common stock they may acquire upon the exercise of outstanding warrants. We issued the warrants to the selling stockholders in a private placement financing we completed in September 2014. The warrants have an exercise price of \$2.00 per share. In October 2014, we entered into a securities purchase agreement with certain institutional investors pursuant to which we sold 13,500 units, consisting of preferred stock and warrants (the "October Transaction"). In connection with the October Transaction, we agreed, subject to stockholder approval to reduce the exercise price of the warrants being registered here to \$0.5771 per share. We are currently seeking stockholder approval for the October Transaction, including the reduction in the exercise price of the warrants.

We will not receive any proceeds from the resale of the shares of our common stock by the selling stockholders. Any proceeds received by us from the exercise of the warrants will be used for general corporate purposes. The selling stockholders may offer shares of our common stock from time to time in a number of different ways and at varying prices. For more information on possible methods of offer and sale by the selling stockholders, refer to the section of this prospectus entitled "Plan of Distribution."

Our common stock is listed on The NASDAQ Global Market under the symbol "CYTX." On November 6, 2014, the last reported sale price for our common stock was \$0.50 per share.

Our business and an investment in our securities involve significant risks. See "Risk Factors" beginning on page 5 of this prospectus to read about factors that you should consider before making an investment decision.

Neither the U.S. Securities and Exchange Commission nor any state securities commission has approved or disapproved these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

Prospectus dated November 12, 2014

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This prospectus is part of a registration statement on Form S-3 that we have filed with the U.S. Securities and Exchange Commission (the “SEC”) under the Securities Act of 1933, as amended (the “Securities Act”). Under this registration process, holders of the warrants we issued in a private placement financing in September 2014 may, from time to time, sell or otherwise dispose of up to 4,032,389 shares of our common stock. The registration statement containing this prospectus, including the exhibits to the registration statement, provides additional information about us and the securities offered under this prospectus. The registration statement, including the exhibits, can be read on the SEC’s website or at the SEC offices mentioned under the heading “Where You Can Find More Information.”

You should rely only on the information contained or incorporated by reference in this prospectus and in any applicable prospectus supplement. We have not authorized anyone to provide you with different information. If anyone provides you with different information, you should not rely on it. We are not making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information contained in this prospectus, any applicable prospectus supplement and the documents incorporated by reference herein and therein are accurate only as of the date such information is presented or in any applicable prospectus supplement. Neither the delivery of this prospectus nor any sale made in connection with this prospectus shall, under any circumstances, create any implication that there has been no change in our affairs since the date of this prospectus or that the information contained by reference to this prospectus is correct as of any time after its date.

This prospectus may be supplemented from time to time to add, update or change information in this prospectus. Any statement contained in this prospectus will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in such prospectus supplement modifies or supersedes such statement. Any statement so modified will be deemed to constitute a part of this prospectus only as so modified, and any statement so superseded will be deemed not to constitute a part of this prospectus.

In this prospectus, “Cytori Therapeutics,” “the Company,” “we,” “us,” and “our” refer to Cytori Therapeutics, Inc., a Delaware corporation, unless the context otherwise requires, and references to “common stock” refer to the Company’s common stock, par value \$0.001 per share.

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the documents incorporated herein by reference contain forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. These statements are based on our management's current beliefs, expectations and assumptions about future events, conditions and results and on information currently available to us. Discussions containing these forward-looking statements may be found, among other places, in the Sections entitled "Business," "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" incorporated by reference from our most recent Annual Report on Form 10-K and in our Quarterly Reports on Form 10-Q, as well as any amendments thereto, filed with the SEC.

All statements, other than statements of historical fact, included or incorporated herein regarding our strategy, future operations, financial position, future revenues, projected costs, plans, prospects and objectives are forward-looking statements. Words such as "expect," "anticipate," "intend," "plan," "believe," "seek," "estimate," "think," "may," "could," "will," "would," "should," "continue," "potential," "likely," "opportunity" and similar expressions or variations of such words are intended to identify forward-looking statements, but are not the exclusive means of identifying forward-looking statements. Additionally, statements concerning future matters such as our anticipated expenditures, including those related to clinical research studies and general and administrative expenses, the potential size of the market for our products, future development and/or expansion of our products and therapies in our markets, our ability to generate product revenues or effectively manage our gross profit margins, our ability to obtain regulatory clearance, expectations as to our future performance and other statements regarding matters that are not historical are forward-looking statements. Such statements are based on currently available operating, financial and competitive information and are subject to various risks, uncertainties and assumptions that could cause actual results to differ materially from those anticipated or implied in our forward-looking statements due to a number of factors including, but not limited to, those set forth above under the section entitled "Risk Factors" in this prospectus and any accompanying prospectus supplement. Given these risks, uncertainties and other factors, many of which are beyond our control, you should not place undue reliance on these forward-looking statements.

Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to revise any forward-looking statements to reflect events or developments occurring after the date of this prospectus, even if new information becomes available in the future.

PROSPECTUS SUMMARY

This summary highlights selected information about us, this offering and information appearing elsewhere in this prospectus, in the accompanying prospectus and in the documents we incorporate by reference. This summary is not complete and does not contain all the information you should consider before investing in our securities pursuant to this prospectus and the accompanying prospectus. Before making an investment decision, to fully understand this offering and its consequences to you, you should carefully read this entire prospectus and the accompanying prospectus, including “Risk Factors” beginning on page S-5 of this prospectus and the financial statements and related notes and the other information that we incorporated by reference herein, including our Annual Reports on Form 10-K and Quarterly Reports on Form 10-Q that we file from time to time.

Unless the context otherwise requires, all references in this prospectus to “Cytori,” “we,” “us,” “our,” “the Company” or similar words refer to Cytori Therapeutics, Inc., together with our consolidated subsidiaries.

Business Overview

We are a medical company dedicated to the development of novel treatments and devices for a range of disorders using cells as a key part of the therapy. We are presently focused on developing our primary product, Cytori Cell Therapy, for patients with cardiovascular disease, orthopedic disorders, complications of immunologic disease, urinary incontinence and thermal burns combined with radiation injury. We are actively investigating broadening the use of our technology platform into other areas as well, through internal research or that of our partners.

Cytori Cell Therapy is a proprietary formulation of stem and regenerative cells derived from a patient’s own adipose (fat) tissue (ADRCs). Adipose tissue is a rich and accessible source of stem and other regenerative cells. To access these cells from a patient at the time of a surgical procedure, we have designed and developed a sophisticated tissue processing system, the Celution® System, which automates the complex process of digesting fat tissue, releasing the ADRCs, and concentrating them into an optimized and proprietary formulation in a sterile environment. The system is comprised of a central device and single-use, per-procedure consumable cartridges. The business model is based on the sale of the device and generating recurring revenue from the cartridges that are utilized in each procedure.

In addition to our targeted therapeutic development, we have continue to upgrade and sell our Celution® System under select medical device clearances to customers developing new therapeutic applications for Cytori Cell Therapy in Europe, Japan, and other regions. The sales enhance the body of clinical feasibility data using our technology that could lead to new indications and intellectual property, contribute to near term marginal profit that partially offset our operating expenses and provide the basis for further partnerships and commercial experience that should facilitate future product revenue growth.

Development Pipeline

The primary therapeutic areas currently in the development pipeline are cardiovascular disease, specifically heart failure due to ischemic heart disease, the treatment of thermal burns, and orthopedics and sports medicine indications.

In the U.S., we are conducting our ATHENA and ATHENA II trials, both prospective, double blind, placebo-controlled, multi-center trials designed to enroll up to 45 patients per trial with ischemic heart disease at a lower and higher cell dose, respectively. The trials will evaluate several endpoints, including peak oxygen consumption (VO₂ max). Additional endpoints include perfusion defect, left ventricle end-systolic and diastolic volume and ejection fraction at six and 12 months, NYHA functional class, and health-related quality of life. In August 2014, we announced that enrollment in both ATHENA trials had been placed on hold based on a safety review of reported cerebrovascular events. As a result, it will not be possible to complete enrollment of the ATHENA trial by year end 2014 as previously anticipated. The symptoms, which occurred in three patients, appear to be related in part to the medical comorbidities in the treated population and the complex nature of the procedures involved in the trial. On October 2014, the FDA communicated approval to open enrollment based on Cytori's submission of additional data, both clinical and preclinical, as well as proposed protocol amendments. The Company's management and the board of directors have evaluated the impact of delays in enrollment on the long-term objectives on having an approved medical device with an indication for heart failure. We have also considered the progress of our next generation cell processing system, which would be available for clinical studies in the later part of 2015 and the importance of incorporating the newer system into any further potential cardiovascular studies. Therefore, Cytori will end enrollment of the ATHENA trials at current enrollment level, which will permit an evaluation of 6 month follow-up data during the first quarter of 2015. Further trials in the cardiac therapeutic area will be based on examination of the ATHENA data along with previous clinical trial data in chronic myocardial ischemia (PRECISE clinical trial).

ADVANCE is a European clinical trial for acute myocardial infarction (heart attack) sponsored by Cytori. Enrollment in the trial was discontinued on September 30, 2013 prior to the original target enrollment in order to focus our internal and financial resources on the U.S. ATHENA trial. All evidence to date from the ADVANCE trial supports the current, known safety profile for Cytori Cell Therapy; the interpretation of efficacy data is limited due to the relatively small number of subjects enrolled. In addition, we have completed two European pilot trials (PRECISE and APOLLO) investigating Cytori Cell Therapy for cardiovascular disease. The PRECISE trial studied patients with chronic myocardial ischemia. Long term follow up data from the PRECISE trial was published in the American Heart Journal in April 2014 supporting the safety profile, feasibility and indications of a favorable benefit to risk profile. Results from the APOLLO trial for acute heart attack demonstrated the safety and feasibility of Cytori Cell Therapy in this population but the size of the pilot trial was not sufficient to comment definitively on efficacy.

In addition to our cardiovascular disease therapeutic pipeline, Cytori is also developing its cell therapy platform for the treatment of thermal burns combined with radiation injury, sports medicine and orthopedics. In the third quarter of 2012, we were awarded a contract to develop a new countermeasure for thermal burns valued at up to \$106 million with the U.S. Department of Health and Human Service's Biomedical Advanced Research and Development Authority (BARDA), including a base period of \$4.7 million over two years and three contract options. In August 2014, BARDA exercised Option 1 of the contract for Cytori to perform research, development, regulatory, clinical and other tasks required for initiation of a pilot clinical trial of the Celution System in thermal burn injury for the costs plus fixed fee of up to \$12.1 million, BARDA and Cytori also amended to the Statement of Work, and reorganized of the contract options. We expect the majority of the work to Option 1 be completed by the first half of 2015.

In October 2014, we received FDA approval to conduct a phase II safety and feasibility study evaluating the effect of Cytori Cell Therapy in patients with osteoarthritis of the knee to be called the ACT-OA trial. Based on our internal analysis of the clinical and commercial chances of success, we have decided that osteoarthritis will be our primary orthopedic target indication and we have decided to close our trial on acute hamstring tears known as RECOVER as it did not meet our internal evaluation criteria to proceed. Other therapeutic targets under evaluation include stress urinary incontinence in men following radical prostatectomy and hand dysfunction due to scleroderma. Both areas of evaluation are based on positive data reported in peer reviewed journals.

Corporate Background

We were initially formed as a California general partnership in July 1996, and incorporated in the State of Delaware in May 1997. We were formerly known as MacroPore Biosurgery, Inc., and before that as MacroPore, Inc. Our corporate offices are located at 3020 Callan Road, San Diego, CA 92121. Our telephone number is (858) 458-0900. We maintain an Internet website at www.cytori.com. The contents on our website are not part of this prospectus, and the reference to our website does not constitute incorporation by reference into this prospectus of the information contained at that site. Additional information about us can be found in our periodic and current reports filed with the SEC. Copies of our current and periodic reports filed with the SEC are available at the SEC Public Reference Room at 450 Fifth Street, N.W., Washington, D.C. 20549, and online at www.sec.gov.

The Offering

Common stock being offered by the selling stockholders:	Up to 4,032,389 shares of common stock issuable upon exercise of outstanding warrants. See “Selling Stockholders” beginning on page 8 of this prospectus.
Warrant exercise price:	\$2.00 per share. We are currently seeking stockholder approval for the October Transaction, including the reduction in the exercise price of the warrants to \$.5771 per share.
Warrant exercisability and expiration:	The warrants exercisable on the date that is six months and one day from the date of issuance and will expire five years from the date of issuance.
Use of Proceeds:	All proceeds from the sale of shares of common stock under this prospectus will be for the account of the selling stockholders. We will not receive any proceeds from the sale of our common stock offered pursuant to this prospectus. Any proceeds received by us from the exercise of the warrants will be used for general corporate purposes, including the continued development, manufacture, marketing and sale of our Celution® System family of products, including related research and clinical trials, and other related research and development, sales and marketing, and general administrative expenses, working capital and capital expenditures. See the section entitled “Use of Proceeds” in this prospectus.
NASDAQ Symbol:	CYTX
Trading:	The Company’s shares of common stock currently trade on The NASDAQ Global Market. There is no established trading market for the warrants, and we do not intend to list the warrants on any exchange or other trading system.
Risk Factors:	Investing in our securities involves a high degree of risk and purchasers of our securities may lose their entire investment. See “Risk Factors” below and the other information included elsewhere in this prospectus for a discussion of factors you should carefully consider before deciding to invest in our securities.

Except as otherwise indicated, all information in this prospectus is based on 83,574,164 shares of common stock outstanding as of September 30, 2014 and excludes, as of September 30, 2014, the following:

- 10,138,914 shares of common stock issuable upon the exercise of outstanding stock options, having a weighted average exercise price of \$3.84 per share.
- 209,949 shares of common stock issuable upon the vesting of outstanding restricted stock awards.
- 8,399,914 shares of our common stock issuable upon the exercise of outstanding warrants with a weighted-average exercise price of \$2.69 per share.

Unless otherwise indicated, all information in this prospectus assumes that no options, warrants, shares of common stock or rights exercisable or convertible into shares of common stock were issued after September 30, 2014, and no outstanding options or warrants were exercised and no restricted stock units vested after September 30, 2014.

RISK FACTORS

Investment in our securities involves risks. Prior to making a decision about investing in our securities, you should consider carefully all of the information included and incorporated by reference or deemed to be incorporated by reference in this prospectus or the applicable prospectus supplement, including the risk factors incorporated by reference herein from our Quarterly Report on Form 10-Q for the quarter ended September 30, 2014, as updated by annual, quarterly and other reports and documents we file with the SEC after the date of this prospectus and that are incorporated by reference herein or in the applicable prospectus supplement. Each of these risk factors could have a material adverse effect on our business, results of operations, financial position or cash flows, which may result in the loss of all or part of your investment.

USE OF PROCEEDS

We will not receive any proceeds from the resale of the shares of our common stock by the selling stockholders. We cannot predict when or if the warrants will be exercised, and it is possible that the warrants may expire and never be exercised. Any proceeds received by us from the exercise of the warrants will be used for general corporate purposes, including the continued development, manufacture, marketing and sale of our Celution® System family of products, including related research and clinical trials, and other related research and development, sales and marketing, and general administrative expenses, working capital and capital expenditures. We may also use a portion of the net proceeds to invest in or acquire businesses or technologies that we believe are complementary to our own, although we have no current plans, commitments or agreements with respect to any acquisitions as of the date of this prospectus.

The amounts actually expended for each purpose may vary significantly depending upon numerous factors, including the availability of additional financing and other factors, including the risks and uncertainties discussed in “Risk Factors.” Investors will be relying on the judgment of our management regarding the application of the proceeds we receive upon exercise of the warrants. Pending these uses, we plan to invest the net proceeds of this offering in short-term, interest-bearing, investment-grade securities.

DIVIDEND POLICY

We have never declared or paid any cash dividends on our capital stock and we do not currently anticipate declaring or paying cash dividends on our capital stock in the foreseeable future, except with respect to any amounts payable in connection with our October 8, 2014 Securities Purchase Agreement for the Company's Series A 3.6% Convertible Preferred Stock. We otherwise currently intend to retain all of our future earnings, if any, to finance the operation and expansion of our business. Any future determination relating to our dividend policy will be made at the discretion of our board of directors and will depend on a number of factors, including future earnings, capital requirements, financial conditions, future prospects, contractual restrictions and covenants and other factors that our board of directors may deem relevant.

SELLING STOCKHOLDERS

In September 2014, we issued warrants in connection with the amendment of outstanding warrants issued in connection with a private placement financing to “accredited investors” as defined in Rule 501(a) under the Securities Act pursuant to an exemption from registration under the Securities Act (the “September Warrants”). The September Warrants are exercisable for shares of our common stock at an exercise price of \$2.00 per share. In October 2014, we entered into a securities purchase agreement with certain institutional investors pursuant to which we sold 13,500 units, consisting of preferred stock and warrants (the “October Transaction”). In connection with the October Transaction, we agreed, subject to stockholder approval to reduce the exercise price of the warrants being registered here to \$0.5771 per share. We are currently seeking stockholder approval for the October Transaction, including the reduction in the exercise price of the warrants.

In connection with the September 2014 private placement, we entered into a registration rights agreement pursuant to which we are required to use our reasonable efforts to register the shares issuable upon exercise of the September Warrants (the “September Warrant Shares”) by filing a registration statement on Form S-3 that permits the resale of the September Warrant Shares by the selling stockholders and their permitted assigns into the market from time to time over an extended period. The filing of this shelf registration statement is being made pursuant to the registration rights agreement to register the shares of common stock the selling stockholders listed in the table below may acquire upon the exercise of the September Warrants.

When we refer to the selling stockholders in this prospectus, we mean those persons listed in the table below, as well as the permitted transferees, pledgees, donees, assignees, successors and others who later come to hold any of the selling stockholders’ interests other than through a public sale.

The selling stockholders may from time to time offer and sell pursuant to this prospectus any or all of the shares of common stock set forth in the following table. There is no requirement for the selling stockholders to sell their shares, and we do not know when, or if, or in what amount the selling stockholders may offer the securities for sale pursuant to this prospectus.

The table below has been prepared based upon the information furnished to us by the selling stockholders as of September 30, 2014. The selling stockholders identified below may have sold, transferred or otherwise disposed of some or all of their shares since the date on which the information in the following table is presented in transactions exempt from or not subject to the registration requirements of the Securities Act. Information concerning the selling stockholders may change from time to time and, if necessary, we will supplement this prospectus accordingly. We cannot give an estimate as to whether the selling stockholders will in fact sell any or all of their shares of common stock.

To our knowledge and except as noted below, none of the selling stockholders has, or within the past three years has had, any material relationship with us or any of our affiliates.

Selling Stockholders	Beneficial ownership prior to registration		Shares registered pursuant to this prospectus (maximum number that may be sold)	Beneficial ownership after registration assuming all shares are sold	
	Shares	Percentage of class		Shares	Percentage of class
Goldman Partners L.P.	809,718	0.88%	404,859	809,718 ¹	1.32%
Neal Goldman	404,858	0.44%	202,429	404,858 ²	0.66%
Sabby Healthcare Volatility Warrant Master Fund Ltd.	4,048,584	4.40%	2,024,292	4,048,584 ³	6.60%
Sabby Volatility Warrant Master Fund Ltd.	2,429,150	2.64%	1,214,575	2,429,150 ⁴	3.96%
Alice Ann Corporation	40,450	0.04%	20,225	40,450 ⁵	0.07%
Robert G. Allison	80,998	0.09%	40,499	80,998 ⁶	0.13%
Gary A. Bergren	40,450	0.04%	20,225	40,450 ⁷	0.07%
William H. Baxter Trustee FBO William H. Baxter Revocable Trust u/a dtd 7/3/96	32,390	0.04%	16,195	32,390 ⁸	0.05%
Dorothy J. Hoel	28,340	0.03%	14,170	28,340 ⁹	0.05%
Richard A. Hoel	20,240	0.02%	10,120	20,240 ¹⁰	0.03%
Stephanie L. Russo	28,400	0.03%	14,200	28,400 ¹¹	0.05%
Janet & Donald Voight Trustees FBO Janet M. Voight Trust u/a dtd 8/28/96	20,200	0.02%	10,100	20,200 ¹²	0.03%
Pyramid Partners, LP	81,000	0.09%	40,500	81,000 ¹³	0.13%

* Less than one percent

¹ Beneficial ownership does not reflect the 404,859 shares underlying the warrants registered pursuant to this prospectus, as the warrants are not exercisable for common stock within 60 days of September 30, 2014.

² Beneficial ownership does not reflect the 202,429 shares underlying the warrants registered pursuant to this prospectus, as the warrants are not exercisable for common stock within 60 days of September 30, 2014.

³ Beneficial ownership does not reflect the 2,024,292 shares underlying the warrants registered pursuant to this prospectus, as the warrants are not exercisable for common stock within 60 days of September 30, 2014.

⁴ Beneficial ownership does not reflect the 1,214,575 shares underlying the warrants registered pursuant to this prospectus, as the warrants are not exercisable for common stock within 60 days of September 30, 2014.

⁵ Beneficial ownership does not reflect the 20,225 shares underlying the warrants registered pursuant to this prospectus, as the warrants are not exercisable for common stock within 60 days of September 30, 2014.

⁶ Beneficial ownership does not reflect the 40,499 shares underlying the warrants registered pursuant to this prospectus, as the warrants are not exercisable for common stock within 60 days of September 30, 2014.

⁷ Beneficial ownership does not reflect the 20,225 shares underlying the warrants registered pursuant to this prospectus, as the warrants are not exercisable for common stock within 60 days of September 30, 2014.

⁸ Beneficial ownership does not reflect the 16,195 shares underlying the warrants registered pursuant to this Form prospectus, as the warrants are not exercisable for common stock within 60 days of September 30, 2014.

⁹ Beneficial ownership does not reflect the 14,170 shares underlying the warrants registered pursuant to this prospectus, as the warrants are not exercisable for common stock within 60 days of September 30, 2014.

¹⁰ Beneficial ownership does not reflect the 10,120 shares underlying the warrants registered pursuant to this prospectus, as the warrants are not exercisable for common stock within 60 days of September 30, 2014.

¹¹ Beneficial ownership does not reflect the 14,200 shares underlying the warrants registered pursuant to this prospectus, as the warrants are not exercisable for common stock within 60 days of September 30, 2014.

¹² Beneficial ownership does not reflect the 10,100 shares underlying the warrants registered pursuant to this prospectus, as the warrants are not exercisable for common stock within 60 days of September 30, 2014.

¹³ Beneficial ownership does not reflect the 40,500 shares underlying the warrants registered pursuant to prospectus, as the warrants are not exercisable for common stock within 60 days of September 30, 2014.

Beneficial ownership of shares and percentage ownership are determined in accordance with the SEC's rules. In calculating the number of shares beneficially owned by an individual or entity and the percentage ownership of that individual or entity, shares underlying options, warrants or restricted stock units held by that individual or entity that are either currently exercisable or exercisable within 60 days from the date of this prospectus are deemed outstanding. These shares, however, are not deemed outstanding for the purpose of computing the percentage ownership of any other individual or entity. Unless otherwise indicated and subject to community property laws where applicable, the individuals and entities named in the table above have sole voting and investment power with respect to all shares of our common stock shown as beneficially owned by them.

We have based our calculations of the percentage of beneficial ownership on 91,974,078 shares of common stock outstanding as of September 30, 2014.

- (1) Includes **83,574,164** shares of common stock, and
- (2) Includes **8,399,914** shares of common stock issuable upon the exercise of outstanding warrants.

PLAN OF DISTRIBUTION

Each Selling Stockholder (the "Selling Stockholders") of the securities and any of their pledgees, assignees and successors-in-interest may, from time to time, sell any or all of their securities covered hereby on The NASDAQ Global Market or any other stock exchange, market or trading facility on which the securities are traded or in private transactions. These sales may be at fixed or negotiated prices.

A Selling Stockholder may use any one or more of the following methods when selling securities:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the securities as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- settlement of short sales;
- in transactions through broker-dealers that agree with the Selling Stockholders to sell a specified number of such securities at a stipulated price per security;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- a combination of any such methods of sale; or
- any other method permitted pursuant to applicable law.

The Selling Stockholders may also sell securities under Rule 144 under the Securities Act, if available, rather than under this prospectus.

Broker-dealers engaged by the Selling Stockholders may arrange for other brokers-dealers to participate in sales. Broker-dealers may receive commissions or discounts from the Selling Stockholders (or, if any broker-dealer acts as agent for the purchaser of securities, from the purchaser) in amounts to be negotiated, but, except as set forth in a supplement to this Prospectus, in the case of an agency transaction not in excess of a customary brokerage commission in compliance with FINRA Rule 2440; and in the case of a principal transaction a markup or markdown in compliance with FINRA IM-2440.

In connection with the sale of the securities or interests therein, the Selling Stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the securities in the course of hedging the positions they assume. The Selling Stockholders may also sell securities short and deliver these securities to close out their short positions, or loan or pledge the securities to broker-dealers that in turn may sell these securities. The Selling Stockholders may also enter into option or other transactions with broker-dealers or other financial institutions or create one or more derivative securities which require the delivery to such broker-dealer or other financial institution of securities offered by this prospectus, which securities such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

The Selling Stockholders and any broker-dealers or agents that are involved in selling the securities may be deemed to be “underwriters” within the meaning of the Securities Act in connection with such sales. In such event, any commissions received by such broker-dealers or agents and any profit on the resale of the securities purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. Each Selling Stockholder has informed the Company that it does not have any written or oral agreement or understanding, directly or indirectly, with any person to distribute the securities.

The Company is required to pay certain fees and expenses incurred by the Company incident to the registration of the securities. The Company has agreed to indemnify the Selling Stockholders against certain losses, claims, damages and liabilities, including liabilities under the Securities Act.

Because Selling Stockholders may be deemed to be “underwriters” within the meaning of the Securities Act, they will be subject to the prospectus delivery requirements of the Securities Act including Rule 172 thereunder. In addition, any securities covered by this prospectus which qualify for sale pursuant to Rule 144 under the Securities Act may be sold under Rule 144 rather than under this prospectus. The Selling Stockholders have advised us that there is no underwriter or coordinating broker acting in connection with the proposed sale of the resale securities by the Selling Stockholders.

We agreed to keep this prospectus effective until the earlier of (i) the date on which the securities may be resold by the Selling Stockholders without registration and without regard to any volume or manner-of-sale limitations by reason of Rule 144, without the requirement for the Company to be in compliance with the current public information under Rule 144 under the Securities Act or any other rule of similar effect or (ii) all of the securities have been sold pursuant to this prospectus or Rule 144 under the Securities Act or any other rule of similar effect. The resale securities will be sold only through registered or licensed brokers or dealers if required under applicable state securities laws. In addition, in certain states, the resale securities covered hereby may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with.

Under applicable rules and regulations under the Exchange Act, any person engaged in the distribution of the resale securities may not simultaneously engage in market making activities with respect to the common stock for the applicable restricted period, as defined in Regulation M, prior to the commencement of the distribution. In addition, the Selling Stockholders will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including Regulation M, which may limit the timing of purchases and sales of the common stock by the Selling Stockholders or any other person. We will make copies of this prospectus available to the Selling Stockholders and have informed them of the need to deliver a copy of this prospectus to each purchaser at or prior to the time of the sale (including by compliance with Rule 172 under the Securities Act).

DESCRIPTION OF SECURITIES

The following description of our common stock and preferred stock, together with any additional information we include in any related free writing prospectus, summarizes the material terms and provisions of our common stock and preferred stock that we are offering under this prospectus. For the complete terms of our common stock and preferred stock, please refer to our certificate of incorporation and bylaws that are incorporated by reference into the registration statement of which this prospectus forms a part. The summary below and that contained in any applicable related free writing prospectus are qualified in their entirety by reference to our certificate of incorporation and bylaws.

General

As of the date of this prospectus, our certificate of incorporation, as amended, authorizes us to issue up to (i) 145,000,000 shares of common stock, par value \$0.001 per share and (ii) 5,000,000 shares of Preferred. As of September 30, 2014, there were 83,574,164 shares of our common stock and 0 shares of preferred stock issued and outstanding. In addition, as of September 30, 2014, there were 10,348,863 shares of common stock that may be issued upon the exercise of outstanding stock options and the vesting of outstanding restricted stock units, 8,399,914 shares of common stock that may be issued upon the exercise of outstanding warrants, and 3,975,000 shares of common stock reserved for future issuance under our 2014 Equity Incentive Plan.

The following summary describes the material terms of our capital stock. The description of our capital stock is qualified by reference to our certificate of incorporation and our bylaws, which are incorporated by reference as exhibits into the registration statement of which this prospectus is a part.

Common Stock

The holders of Common Stock possess exclusive voting rights in us, except to the extent our board of directors specifies voting power with respect to any other class of securities issued in the future. Each holder of our common stock is entitled to one vote for each share held of record on each matter submitted to a vote of stockholders, including the election of directors. Stockholders do not have any right to cumulate votes in the election of directors.

Subject to preferences that may be granted to the holders of preferred stock, each holder of our common stock is entitled to share ratably in distributions to stockholders and to receive ratably such dividends as may be declared by our board of directors out of funds legally available therefor. In the event of our liquidation, dissolution or winding up, the holders of our common stock will be entitled to receive, after payment of all of our debts and liabilities and of all sums to which holders of any preferred stock may be entitled, the distribution of any of our remaining assets. Holders of our common stock have no conversion, exchange, sinking fund, redemption or appraisal rights (other than such as may be determined by our board of directors in its sole discretion) and have no preemptive rights to subscribe for any of our securities.

All of the outstanding shares of our common stock are, and the shares of common stock issued upon the conversion of any securities convertible into our common stock will be, fully paid and non-assessable. The shares of common stock offered by this prospectus or upon the exercise of the September Warrants, when issued and paid for, will also be, fully paid and non-assessable.

Our common stock is listed on The NASDAQ Global Market under the symbol "CYTX."

Preferred Stock

Our board is authorized, without action by our stockholders, to classify or reclassify any unissued portion of our authorized shares of preferred stock to provide for the issuance of shares of other classes or series, including preferred stock in one or more series. Our board may fix or alter the dividend rights, dividend rate, conversion rights, voting rights, rights and terms of redemption (including sinking fund provisions), the redemption price or prices, the liquidation preferences of any wholly unissued series of Preferred Stock, and the number of shares constituting any such series and the designation thereof, or any of them; and to increase or decrease the number of shares of any series subsequent to the issue of shares of that series, but not below the number of shares of such series then outstanding. In case the number of shares of any series shall be so decreased, the shares constituting such decrease shall resume the status which they had prior to the adoption of the resolution originally fixing the number of shares of such series.

Possible Anti-Takeover Effects of Delaware Law and our Certificate of Incorporation and Bylaws

Delaware Anti-Takeover Statute

We are subject to Section 203 of the DGCL, an anti-takeover statute. In general, Section 203 of the DGCL prohibits a publicly held Delaware corporation from engaging in a “business combination” with an “interested stockholder” for a period of three years following the time the person became an interested stockholder, unless the business combination or the acquisition of shares that resulted in a stockholder becoming an interested stockholder is approved in a prescribed manner. Generally, a “business combination” includes a merger, asset or stock sale, or other transaction resulting in a financial benefit to the interested stockholder. Generally, an “interested stockholder” is a person who, together with affiliates and associates, owns (or within three years prior to the determination of interested stockholder status did own) 15% or more of a corporation’s voting stock. The existence of this provision would be expected to have an anti-takeover effect with respect to transactions not approved in advance by our board of directors, including discouraging attempts that might result in a premium over the market price for the shares of common stock held by our stockholders.

Board Vacancies

Our bylaws provide that any vacancy or vacancies in the Board shall be deemed to exist in the case of the death, resignation or removal of any director, or if the authorized number of directors be increased. Vacancies may be filled by a majority of the remaining directors, though less than a quorum, or by a sole remaining director, unless otherwise provided in the Certificate of Incorporation. The stockholders may elect a director or directors at any time to fill any vacancy or vacancies not filled by the directors.

Undesignated Preferred Stock

The authority that will be possessed by our board of directors to issue preferred stock could potentially be used to discourage attempts by third parties to obtain control of our company through a merger, tender offer, proxy contest or otherwise by making such attempts more difficult or more costly. Our board of directors may issue preferred stock with voting rights or conversion rights that, if exercised, could adversely affect the voting power of the holders of our common stock:

Special Meeting Requirements

Our amended and restated bylaws provide that special meetings of our stockholders may only be called at the request of our president, chief executive officer or chairman of the board or by a majority of our Board of Directors.

No Cumulative Voting

The DGCL provides that stockholders are denied the right to cumulate votes in the election of directors unless our certificate of incorporation provides otherwise. Our certificate of incorporation does not provide for cumulative voting.

Authorized but Unissued Shares

Our authorized but unissued shares of common stock and preferred stock will be available for future issuance without stockholder approval. We may use additional shares for a variety of purposes, including future public offerings to raise additional capital, to fund acquisitions and as employee compensation. The existence of authorized but unissued shares of common stock and preferred stock could render more difficult or discourage an attempt to obtain control of us by means of a proxy contest, tender offer, merger or otherwise.

The above provisions may deter a hostile takeover or delay a change in control or management of us.

Transfer Agent and Registrar

The transfer agent and registrar for our capital stock is ComputerShare Investor Services, LLC.

Warrants

The warrants offered in this offering will be issued pursuant to an amendment to an outstanding warrant issued in connection with subscription agreement between each of the selling stockholders and us. You should review the form of warrant, which was filed as exhibits to a Current Report on Form 8-K filed with the SEC on September 8, 2014, for a complete description of the terms and conditions applicable to the warrants. The following is a brief summary of the warrants and is subject in all respects to the provisions contained in such warrants:

Exercisability; Beneficial Ownership Limitation. The warrants are exercisable at any time six months and one day after the original date of issuance and expire five years after issuance date. The warrants will be exercisable, at the option of each holder, in whole or in part by delivering to us a duly executed exercise notice accompanied by payment in full for the number of shares of our common stock purchased upon such exercise (except in the case of a cashless exercise as discussed below). The number of warrant shares that may be acquired by any holder upon any exercise of the warrant will be limited to the extent necessary to insure that, following such exercise (or other issuance), the total number of shares of common stock then beneficially owned by such holder and its affiliates and any other persons whose beneficial ownership of common stock would be aggregated with the holder's for purposes of Section 13(d) of the Exchange Act does not exceed 4.99% of the total number of issued and outstanding shares of common stock (including for such purpose the shares of common stock issuable upon such exercise). We refer to this as the beneficial ownership limitation. The holder may elect to increase this beneficial ownership limitation to any other percentage, but not in excess of 9.99% of the total number of issued and outstanding shares of common stock (including for such purpose the shares of common stock issuable upon such exercise), provided that any such increase or decrease will not be effective until 61 days after such written notice is delivered.

Cashless Exercise. If, at the time of exercise, there is no effective registration statement registering, or no current prospectus available for, the issuance to the holder of the shares of common stock underlying the warrant, the holder may exercise, in whole or in part, the warrant on a cashless basis. When exercised on a cashless basis, a portion of the warrant is cancelled in payment of the purchase price payable in respect of the number of shares of our common stock purchasable upon such exercise.

Exercise Price. Each warrant represents the right to purchase one share of common stock at an exercise price of \$2.00 per share. In October 2014, we entered into a securities purchase agreement with certain institutional investors pursuant to which we sold 13,500 units, consisting of preferred stock and warrants (the "October Transaction"). In connection with the October Transaction, we agreed, subject to stockholder approval to reduce the exercise price of the warrants being registered here to \$0.5771 per share. We are currently seeking stockholder approval for the October Transaction, including the reduction in the exercise price of the warrants. The exercise price and the number of shares underlying the warrants are subject to appropriate adjustment in the event of stock splits, stock dividends on our common stock, stock combinations or similar events affecting our common stock. In addition, in the event we consummate any merger, consolidation, sale or other reorganization event in which our common stock is converted into or exchanged for securities, cash or other property or another person acquires fifty percent of the shares of our outstanding common stock or becomes the beneficial owner of fifty percent of the aggregate ordinary voting power represented by our outstanding common stock, then following such event, the holders of the warrants will be entitled to receive upon exercise of such warrants the kind and amount of securities, cash or other property which the holders would have received had they exercised such warrants immediately prior to such reorganization event.

Fractional Shares. No fractional shares of common stock will be issued in connection with the exercise of a warrant. In lieu of fractional shares, we will pay the holder an amount in cash equal to the fractional amount multiplied by the market value of a share of common stock.

Transferability. A warrant may be transferred by a holder without our consent, upon surrender of the warrant to us, properly endorsed (by the holder executing an assignment in the form attached to the warrant) and upon payment of any necessary tax or other governmental charge imposed upon such transfer.

Exchange Listing. We do not intend to list the warrants on any securities exchange or automated quotation system. Our common stock is listed on The Nasdaq Global Market.

Rights as Stockholder. The holders of the warrants will not have any rights or privileges as stockholders with respect to the shares underlying the warrants until they exercise their warrants.

Waivers and Amendments. The provisions of each warrant may be amended or modified, or the provisions thereof waived, only with the written consent of us and the warrant holder.

LEGAL MATTERS

The validity of the shares offered by this prospectus and certain other legal matters has been passed upon by DLA Piper LLP (US), San Diego, California.

INTERESTS OF NAMED EXPERTS AND COUNSEL

The consolidated financial statements of Cytori Therapeutics, Inc. as of December 31, 2013 and 2012, and for each of the years in the three-year period ended December 31, 2013, and management's assessment of the effectiveness of internal control over financial reporting as of December 31, 2013, have been incorporated by reference herein and in the registration statement in reliance upon the reports of KPMG LLP, independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing.

The audit report on the effectiveness of internal control over financial reporting as of December 31, 2013, expresses an opinion that Cytori Therapeutics, Inc. did not maintain effective internal control over financial reporting as of December 31, 2013 because of the effect of a material weakness on the achievement of the objectives of the control criteria and contains an explanatory paragraph that states a material weakness has been identified related to the recognition and measurement of revenue and is included in management's assessment.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the informational requirements of the Exchange Act. Accordingly, we file annual, quarterly and special reports, proxy statements and other information with the SEC. You may read and copy any document that we file at the SEC's public reference room at 100 F Street, NE, Washington, DC 20549. Information about the operation of the public reference room may be obtained by calling the SEC at 1-800-SEC-0330. Our SEC filings are also available to you free of charge at the SEC's web site at <http://www.sec.gov>.

You can read and print press releases, financial statements, our most recent annual and quarterly reports and additional information about us, free of charge, at our web site at <http://www.cytori.com>. Our website and the information contained on that site, or connected to that site, are not incorporated into and are not a part of this prospectus.

This prospectus is a part of a registration statement on Form S-3 filed by us with the SEC under the Securities Act. This prospectus does not contain all of the information set forth in the registration statement, certain parts of which are omitted in accordance with the rules and regulations of the SEC. For further information with respect to us and the shares of our common stock offered by the selling stockholders upon exercise of the September Warrants, please refer to the registration statement. The registration statement may be inspected at the public reference facilities maintained by the SEC at the addresses set forth above. Statements in this prospectus about any document filed as an exhibit are not necessarily complete and, in each instance, you should refer to the copy of such document filed with the SEC. Each such statement is qualified in its entirety by such reference.

You should rely only on the information contained in this prospectus or to which we have referred you. We have not authorized any person to provide you with different information or to make any representation not contained in this prospectus.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC permits us to "incorporate" into this prospectus information that we have filed with the SEC in other documents. The information incorporated by reference is an important part of this prospectus. Information in this prospectus supersedes information incorporated by reference that we filed with the SEC prior to the date of this prospectus, while information that we file later with the SEC will automatically update and supersede the information in this prospectus. We incorporate by reference into this registration statement and prospectus the documents listed below, and any future filings we will make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of the initial registration statement but prior to effectiveness of the registration statement and after the date of this prospectus but prior to the termination of the offering of the securities covered by this prospectus (other than current reports or portions thereof furnished under Item 2.02 or Item 7.01 of Form 8-K):

- Our Annual Report on Form 10-K filed with the SEC on March 14, 2014, as amended by Form 10-K/A filed with the SEC on April 30, 2014, for the year ended December 31, 2013;
- Our Quarterly Reports on Form 10-Q for the three months ended March 31, 2014 filed with the SEC on May 12, 2014, for the six months ended June 30, 2014 filed with the SEC on August 11, 2014 and for the nine months ended September 30, 2014, filed with the SEC on November 6, 2014;
- Our Current Reports on Form 8-K filed with the SEC on February 4, 2014, March 11, 2014, April 2, 2014, May 6, 2014, May 12, 2014, May 16, 2014, May 30, 2014, June 12, 2014, July 2, 2014, July 21, 2014, August 4, 2014, August 5, 2014, August 11, 2014, August 19, 2014, September 8, 2014, September 19, 2014, September 30, 2014, October 8, 2014, October 21, 2014, October 28, 2014, October 31, 2014, November 6, 2014;
- Our Definitive Proxy Statement on Schedule 14A filed with the SEC on June 12, 2014; and
- The description of our common stock contained in our registration statement on Form 10/A filed with the SEC on July 16, 2001 (File No. 000-32501).

These documents may also be accessed on our website at www.cytori.com. Except as otherwise specifically incorporated by reference in this prospectus, information contained in, or accessible through, our web site is not a part of this prospectus.

Any statement incorporated herein shall be deemed to be modified or superseded for purposes of this prospectus 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 statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus. We will provide to each person, including any beneficial owner, to whom a prospectus is delivered, without charge upon written or oral request, a copy of any or all of the information that has been incorporated by reference into this prospectus but not delivered with the prospectus, including exhibits that are specifically incorporated by reference into such documents. Requests should be directed to: Cytori Therapeutics, Inc., 3020 Callan Road, San Diego, CA 92121, Attn: Investor Relations, telephone: (858) 458-0900.

CYTORI THERAPEUTICS, INC.



4,032,389 Shares

PROSPECTUS

November 12, 2014

PART II — INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution.

The following table sets forth the costs and expenses payable by us in connection with the sale of the securities being registered hereby. All amounts are estimates except the Securities and Exchange Commission registration fee.

SEC registration fee	\$ 232
Legal fees and expenses	25,000
Accounting fees and expenses	5,000
Printing and reproduction costs	
Miscellaneous	
Total	<u>\$ 30,232</u>

Item 15. Indemnification of Directors and Officers.

Section 145 of the DGCL 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 of 1933, as amended, or the Securities Act.

Our amended and restated certificate of incorporation, as amended (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 amended and restated bylaws, as amended (our "Bylaws"), 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 16. Exhibits.

See Exhibit Index

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 of 1933;

- (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 Securities and Exchange Commission (the "Commission") pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20 percent 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 any material change to such information in the registration statement.
- (2) That, for the purpose of determining any liability under the Securities Act of 1933, 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) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:
- (i) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and
 - (ii) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.
- (5) That, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement 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.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 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.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, Cytori Therapeutics, Inc. has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in San Diego, California, on November 12, 2014.

CYTORI THERAPEUTICS, INC.

/s/ Marc H. Hedrick

Marc H. Hedrick
President and Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints Marc H. Hedrick and Tiago M. Girão, and each of them, his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities including his or her capacity as a director and/or officer of Cytori Therapeutics, Inc., to sign any and all amendments to this registration statement (including post-effective amendments and any related registration statements filed pursuant to Rule 462 and otherwise), and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange 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 and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or any of them, or their or his or her substitute or substitutes, may lawfully do or cause to be done by virtue thereof.

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

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Marc H. Hedrick</u> Marc H. Hedrick	President, Chief Executive Officer, and Director (Principal Executive Officer)	November 12, 2014
<u>/s/ Tiago M. Girão</u> Tiago M. Girão	Vice President of Finance and Chief Financial Officer (Principal Financial and Accounting Officer)	November 12, 2014
<u>/s/ David M. Rickey</u> David M. Rickey	Chairman of the Board of Directors	November 12, 2014
<u>/s/ Richard J. Hawkins</u> Richard J. Hawkins	Director	November 12, 2014
<u>/s/ Paul W. Hawran</u> Paul W. Hawran	Director	November 12, 2014
<u>/s/ Gary A. Lyons</u> Gary A. Lyons	Director	November 12, 2014
<u>/s/ Gail K. Naughton</u> Gail K. Naughton	Director	November 12, 2014
<u>/s/ Tommy G. Thompson</u> Tommy G. Thompson	Director	November 12, 2014
<u>/s/ E. Carmack Holmes</u> E. Carmack Holmes	Director	November 12, 2014

Exhibit Index

The following exhibit index shows those exhibits filed with this report and those incorporated herein by reference:

Exhibit Number	Description
1.1*	Form of Underwriting Agreement (to be filed by amendment or as an exhibit to a report pursuant to Section 13(a), 13(c) or 15(d) of the Exchange Act)
4.1	Composite Certificate of Incorporation (incorporated by reference to our Registration Statement on Form S-3 filed with the Commission on November 19, 2013)
4.2	Amended and Restated Bylaws of Cytori Therapeutics, Inc. (incorporated by reference to our Quarterly Report on Form 10-Q filed with the Commission on August 14, 2003)
4.3	Amendment to Amended and Restated Bylaws of Cytori Therapeutics, Inc. (incorporated by reference to our Current Report on Form 8-K filed with the Commission on May 6, 2014)
4.4	Form of Warrant to Purchase Common Stock (incorporated by reference to our Current Report on Form 8-K filed with the Commission on September 8, 2014)
5.1	Opinion of DLA Piper LLP (US)
23.1	Consent of KPMG LLP
23.2	Consent of DLA Piper LLP (US) (included in Exhibit 5.1)
24.1	Power of Attorney (included on the signature page to the registration statement)

DLA Piper LLP (US)
4365 Executive Drive, Suite 1100
San Diego, California 92121-2133
www.dlapiper.com

T 858.677.1400
F 858.677.1401

November 11, 2014

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

Ladies and Gentlemen:

We have acted as counsel to Cytori Therapeutics, Inc., a Delaware corporation (the “*Company*”), in connection with its filing on the date hereof with the Securities and Exchange Commission (the “*Commission*”) of a registration statement on Form S-3 (as amended, the “*Registration Statement*”), including a base prospectus (the “*Base Prospectus*”), which provides that it will be supplemented by one or more prospectus supplements (each such prospectus supplement, together with the Base Prospectus, a “*Prospectus*”), under the Securities Act of 1933, as amended (the “*Act*”), relating to the registration of up to an aggregate of 4,032,389 shares of the Company’s common stock, \$0.001 par value per share (“*Common Stock*”), issuable upon exercise of outstanding warrants to be sold from time to time by the selling stockholders named therein (the “*Shares*”).

This opinion is being furnished in connection with the requirements of Item 601(b)(5) of Regulation S-K under the Act, and no opinion is expressed herein as to any matter pertaining to the contents of the Registration Statement or related applicable Prospectus, other than as expressly stated herein with respect to the issue of the Shares.

As such counsel, we have examined such matters of fact and questions of law as we have considered appropriate for purposes of this letter. With your consent, we have relied upon certificates and other assurances of officers of the Company and others as to factual matters without having independently verified such factual matters. We are opining herein as to the General Corporation Law of the State of Delaware, and we express no opinion with respect to the applicability thereto, or the effect thereon, of the laws of any other jurisdiction or, in the case of Delaware, any other laws, or as to any matters of municipal law or the laws of any local agencies within any state.

Subject to the foregoing and the other matters set forth herein, it is our opinion that, as of the date hereof, the Shares have been duly authorized by all necessary corporate action of the Company and, upon issuance, delivery and payment therefor in an amount not less than the par value, will be validly issued, fully paid and nonassessable.

This opinion is for your benefit in connection with the Registration Statement and may be relied upon by you and by persons entitled to rely upon it pursuant to the applicable provisions of the Act. We consent to your filing this opinion as an exhibit to the Registration Statement and to the reference to our firm contained in the Prospectus under the heading “Legal Matters.” In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Commission thereunder

Very truly yours,

/s/ DLA Piper LLP (US)

DLA Piper LLP (US)

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors
Cytori Therapeutics, Inc.:

We consent to the use of our reports with respect to the consolidated financial statements, the accompanying schedule of valuation and qualifying accounts and the effectiveness of internal control over financial reporting incorporated by reference herein and to the reference to our firm under the heading "Experts" in the prospectus.

Our report dated March 14, 2014, on the effectiveness of internal control over financial reporting as of December 31, 2013, expresses our opinion that Cytori Therapeutics, Inc. did not maintain effective internal control over financial reporting as of December 31, 2013 because of the effect of a material weakness on the achievement of the objectives of the control criteria and contains an explanatory paragraph that states a material weakness has been identified related to the recognition and measurement of revenue and is included in management's assessment.

 (signed) KPMG LLP

San Diego, California
November 11, 2014
