

PROSPECTUS SUPPLEMENT
(To Prospectus dated May 9, 2011)

\$40,000,000



Common Stock

We have entered into a sales agreement with Cowen and Company, LLC, or Cowen, relating to shares of our common stock, \$0.001 par value per share, offered by this prospectus supplement and the accompanying prospectus. In accordance with the terms of the sales agreement, we may offer and sell shares of our common stock having an aggregate offering price of up to \$40,000,000.

Our common stock is listed on The NASDAQ Global Market under the symbol "CYTX." The last reported sale price of our common stock on May 9, 2014 was \$2.37 per share.

Upon our delivery of a placement notice and subject to the terms and conditions of the sales agreement, Cowen may sell our common stock by methods deemed to be an "at the market offering" as defined in Rule 415 promulgated under the Securities Act of 1933, as amended, or the Securities Act, including sales made directly on The NASDAQ Global Market, on any other existing trading market for our common stock or to or through a market maker. In addition, with our prior written approval, Cowen may also sell our common stock by any other method permitted by law, including in negotiated transactions. Cowen will act as the sales agent using its commercially reasonable efforts consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of The NASDAQ Global Market.

We will pay Cowen a commission, or allow a discount, for its services in acting as agent in the sale of our common stock in an amount up to 3.0% of the gross sales price per share of all shares sold through it as agent under the sales agreement.

Investing in our securities involves a high degree of risk. See "Risk Factors," beginning on page S-5 of this prospectus supplement, as well as the documents incorporated by reference in this prospectus supplement, for a discussion of the factors you should carefully consider before deciding to purchase our securities.

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

Cowen and Company

The date of this prospectus supplement is May 12, 2014

[Table of Contents](#)

TABLE OF CONTENTS

Prospectus Supplement

ABOUT THIS PROSPECTUS SUPPLEMENT	S-1
PROSPECTUS SUPPLEMENT SUMMARY	S-2
THE OFFERING	S-4
RISK FACTORS	S-5
SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS	S-7
USE OF PROCEEDS	S-8
DILUTION	S-9
PLAN OF DISTRIBUTION	S-10
LEGAL MATTERS	S-11
EXPERTS	S-11
WHERE YOU CAN FIND ADDITIONAL INFORMATION	S-11
INCORPORATION OF CERTAIN INFORMATION BY REFERENCE	S-11

TABLE OF CONTENTS

ABOUT THIS PROSPECTUS	Page
SUMMARY	ii
RISK FACTORS	1
SPECIAL NOTE REGARDING FORWARD-LOOKING INFORMATION	3
RATIO OF EARNINGS TO FIXED CHARGES	3
USE OF PROCEEDS	4
SECURITIES WE MAY OFFER	4
DESCRIPTION OF COMMON STOCK AND PREFERRED STOCK	5
DESCRIPTION OF DEBT SECURITIES	5
DESCRIPTION OF WARRANTS	9
DESCRIPTION OF UNITS	18
PLAN OF DISTRIBUTION	19
LEGAL MATTERS	20
EXPERTS	22
WHERE YOU CAN FIND MORE INFORMATION	22
INCORPORATION OF CERTAIN INFORMATION BY REFERENCE	22

ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is the prospectus supplement, including the documents incorporated by reference, which describes the specific terms of this offering. The second part, the accompanying prospectus, including the documents incorporated by reference, provides more general information. Before you invest, you should carefully read this prospectus supplement, the accompanying prospectus, all information incorporated by reference herein and therein, as well as the additional information described under “Where You Can Find Additional Information” on page S-10 of this prospectus supplement. These documents contain information you should consider when making your investment decision. This prospectus supplement may add, update or change information contained in the accompanying prospectus. To the extent there is a conflict between the information contained in this prospectus supplement, on the one hand, and the information contained in the accompanying prospectus or any document incorporated by reference therein filed prior to the date of this prospectus supplement, on the other hand, you should rely on the information in this prospectus supplement. If any statement in one of these documents is inconsistent with a statement in another document having a later date—for example, a document filed after the date of this prospectus supplement and incorporated by reference in this prospectus supplement and the accompanying prospectus—the statement in the document having the later date modifies or supersedes the earlier statement.

You should rely only on the information contained or incorporated by reference in this prospectus supplement, the accompanying prospectus and in any free writing prospectuses we may provide to you in connection with this offering. We have not, and Cowen has not, authorized any other person to provide you with any information that is different. If anyone provides you with different or inconsistent information, you should not rely on it. We are offering to sell, and seeking offers to buy, shares of our common stock only in jurisdictions where offers and sales are permitted. The distribution of this prospectus supplement and the offering of the common stock in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus supplement must inform themselves about, and observe any restrictions relating to, the offering of the common stock and the distribution of this prospectus supplement outside the United States. This prospectus supplement does not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, any securities offered by this prospectus supplement by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference in the accompanying prospectus were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreements, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights selected information about us, this offering and information appearing elsewhere in this prospectus supplement, 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 common stock pursuant to this prospectus supplement 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 supplement and the accompanying prospectus, including “Risk Factors” beginning on page S-5 of this prospectus supplement 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 cell therapy company dedicated to the development of novel treatments primarily for cardiovascular disease as well as for a range of soft tissue injuries. In the U.S. our goal is to bring Cytori Cell Therapy to market for treatment of heart failure due to ischemic heart disease through Cytori-sponsored clinical development efforts and to develop a treatment for thermal burns combined with radiation injury under a contract from BARDA, a division of the U.S. Department of Health and Human Services.

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 continued to commercialize the Celution® System under select medical device clearances to research customers developing new therapeutic applications for Cytori Cell Therapy in Europe, Japan, and other regions. The early sales of systems, consumables and ancillary products contributes margins that partially offset our operating expenses and play an important strategic role in fostering familiarity within the medical community with our technology. These sales have also facilitated the discovery of new applications for Cytori Cell Therapy by customers conducting investigator-initiated and funded research.

Development Pipeline

The primary therapeutic areas currently within our 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 trial, a prospective, double blind, placebo-controlled, multi-center trial in up to 45 patients with ischemic heart disease. The trial will measure 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. Recently, the Food and Drug Administration (“FDA”) approved expanding the ATHENA trial from six trial centers to ten centers. The ATHENA II trial, which is studying a higher cell dose has recently

been initiated at the first clinical site. Enrollment of 45 patients at up to 12 centers is planned, which includes most of the centers in ATHENA I. We currently have one site initiated for ATHENA II, and we expect the ATHENA I sites to immediately roll over to ATHENA II, once ATHENA I enrollment is complete.

ADVANCE is our European clinical trial for acute myocardial infarction (heart attack). As part of a comprehensive evaluation of our global cardiovascular strategy, resource utilization and development priorities, we have discontinued enrollment in the ADVANCE trial as of September 30, 2013. All evidence to date supports the current, known safety profile for Cytori's Cell Therapy and the patients enrolled in the trial will continue to be followed according to the protocol. The outcomes will be fully analyzed in conjunction with the existing safety and feasibility data from the APOLLO acute myocardial infarction trial. We will focus our internal and financial resources on the highest clinical development priority, which is the expanded U.S. ATHENA trial.

We have completed two European pilot trials (PRECISE and APOLLO) investigating Cytori's Cell Therapy for cardiovascular disease. The PRECISE trial studied patients with chronic myocardial ischemia and demonstrated feasibility and safety of Cytori's Cell Therapy as well as an improvement in cardiac functional capacity as measured by VO₂ max. 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"). The initial base period includes \$4.7 million over two years and covers preclinical research and continued development of Cytori's Celution® System to improve cell processing. The additional contract options, if fully executed, could cover our clinical development through FDA approval under a device-based PMA regulatory pathway. We believe we have fulfilled the required milestones of the base contract and we are awaiting final BARDA's decision on the exercise of the first contract option.

We also received FDA approval in late 2013 to conduct a safety and feasibility clinical trial in patients with acute hamstring tears in order to evaluate the effect of Cytori Cell Therapy on healing in muscle injury.

Corporate Information

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. Through this site, we make available free of charge our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) of the Securities Exchange Act of 1934, as amended (the "Exchange Act") as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. In addition, we publish on our website all reports filed under Section 16(a) of the Exchange Act by our directors, officers and 10% stockholders. The information found on our Internet site is not part of this prospectus.

THE OFFERING

Common stock offered by us	Shares having an aggregate offering price up to \$40,000,000.
Manner of offering	“At the market offering” that may be made from time to time through our agent, Cowen and Company, LLC. See “Plan of Distribution” on page S-9.
Use of proceeds	We plan to use the net proceeds from this offering for working capital and general corporate purposes, which include, but are not limited to, funding our ongoing and future clinical studies. Please see “Use of Proceeds” on page S-7.
Risk factors	See “Risk Factors” beginning on page S-5 of this prospectus supplement, as well as the other information included in or incorporated by reference in this prospectus supplement and the accompanying prospectus, for a discussion of risks you should carefully consider before investing in our securities.
The NASDAQ Global Market symbol	CYTX

RISK FACTORS

Investing in our securities involves a high degree of risk and uncertainty. In addition to the other information included or incorporated by reference in this prospectus supplement and the accompanying prospectus, you should carefully consider the risks described in the “Risk Factors” section of our Form 10-Q for the quarter ended March 31, 2014, which is incorporated by reference herein, before making an investment decision with respect to the securities. We expect to update these Risk Factors from time to time in the periodic and current reports that we file with the SEC after the date of this prospectus supplement. These updated Risk Factors will be incorporated by reference in this prospectus supplement and the accompanying prospectus. Please refer to these subsequent reports for additional information relating to the risks associated with investing in our common stock. If any of such risks and uncertainties actually occurs, our business, financial condition, and results of operations could be severely harmed. This could cause the trading price of our common stock to decline, and you could lose all or part of your investment.

Risks Related to this Offering

Resales of our common stock in the public market during this offering by our stockholders may cause the market price of our common stock to fall.

We may issue common stock from time to time in connection with this offering. The issuance from time to time of these new shares of our common stock, or our ability to issue new shares of common stock in this offering, could result in resales of our common stock by our current stockholders concerned about the potential dilution of their holdings. In turn, these resales could have the effect of depressing the market price for our common stock.

There may be future sales or other dilution of our equity, which may adversely affect the market price of our common stock.

We are generally not restricted from issuing additional common stock, including any securities that are convertible into or exchangeable for, or that represent the right to receive, common stock. The market price of our common stock could decline as a result of sales of common stock or securities that are convertible into or exchangeable for, or that represent the right to receive, common stock after this offering or the perception that such sales could occur.

Our management will have broad discretion over the use of the net proceeds from this offering, you may not agree with how we use the proceeds and the proceeds may not be invested successfully.

We have not designated any portion of the net proceeds from this offering to be used for any particular purpose. Accordingly, our management will have broad discretion as to the use of the net proceeds from this offering and could use them for purposes other than those contemplated at the time of commencement of this offering. Accordingly, you will be relying on the judgment of our management with regard to the use of these net proceeds, and you will not have the opportunity, as part of your investment decision, to assess whether the proceeds are being used appropriately. It is possible that, pending their use, we may invest the net proceeds in a way that does not yield a favorable, or any, return for our company.

You may experience immediate and substantial dilution in the book value per share of the common stock you purchase.

Because the prices per share at which shares of our common stock are sold in this offering may be substantially higher than the book value per share of our common stock, you may suffer immediate and substantial dilution in the net tangible book value of the common stock you purchase in this offering. The shares sold in this offering, if any, will be sold from time to time at various prices. After giving effect to the sale of our common stock in the maximum aggregate offering amount of \$40,000,000 at an assumed offering price of \$2.37 per share, the last reported sale price of our common stock on The NASDAQ Global Market on May 9, 2014, and after deducting estimated offering commissions and expenses payable by us, our net tangible book

[Table of Contents](#)

value as of March 31, 2014 would have been \$27,426,000 million, or \$0.30 per share of common stock. This represents an immediate increase in the net tangible book value of \$0.45 per share to our existing stockholders and an immediate and substantial dilution in as-adjusted net tangible book value of \$2.07 per share to new investors who purchase our common stock in the offering. See “Dilution” for a more detailed discussion of the dilution you may incur in connection with this offering.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus and the SEC filings that are incorporated by reference into this prospectus supplement and the accompanying prospectus contain or incorporate by reference forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Securities Exchange Act of 1934, as amended. All statements, other than statements of historical fact, included or incorporated by reference in this prospectus supplement or the accompanying prospectus, including but not limited to statements regarding 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 and expectations as to our future performance, are forward-looking statements. The words “believe,” “anticipate,” “estimate,” “plan,” “expect,” “intend,” “may,” “could,” “should,” “potential,” “likely,” “projects,” “continue,” “will,” and “would” and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. We cannot guarantee that we actually will achieve the plans, intentions or expectations expressed in our forward-looking statements and you should not place undue reliance on our forward-looking statements. There are a number of important factors that could cause our actual results to differ materially from those indicated or implied by forward-looking statements. These important factors include those set forth above under “Risk Factors.” These factors and the other cautionary statements made in this prospectus supplement should be read as being applicable to all related forward-looking statements whenever they appear in this prospectus supplement and the accompanying prospectus. Except as required by law, we do not assume any obligation to update any forward-looking statement. We disclaim any intention or obligation to update or revise any forward-looking statement, whether as a result of new information, future events or otherwise.

USE OF PROCEEDS

We will have broad discretion in the use of the net proceeds from any sale of securities offered under this prospectus supplement and the accompanying prospectus. We intend to use the net proceeds from the sale of the securities 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 have not determined the amount of net proceeds to be used specifically for the foregoing purposes. As a result, our management will have broad discretion in the allocation of the net proceeds and investors will be relying on the judgment of our management regarding the application of the proceeds of any sale of the securities. Pending these uses, we intend to invest the net proceeds in investment-grade, short-term, interest-bearing securities.

DILUTION

If you invest in our common stock, your interest will be diluted immediately to the extent of the difference between the public offering price per share and the adjusted net tangible book value per share of our common stock after this offering.

The net tangible book value of our common stock as of March 31, 2014, was approximately \$(11,014,000) million, or approximately \$(0.15) per share. Net tangible book value per share represents the amount of our total tangible assets, excluding goodwill and intangible assets, less total liabilities, divided by the total number of shares of our common stock outstanding. Dilution per share to new investors represents the difference between the amount per share paid by purchasers for each share of common stock in this offering and the net tangible book value per share of our common stock immediately following the completion of this offering.

After giving effect to the sale of shares of our common stock in the aggregate amount of \$40,000,000 at an assumed offering price of \$2.37 per share, the last reported sale price of our common stock on May 9, 2014 on The NASDAQ Global Market, and after deducting estimated commissions and estimated offering expenses, our as-adjusted net tangible book value as of March 31, 2014 would have been approximately \$27,426,000 million or approximately \$0.30 per share. This represents an immediate increase in net tangible book value of approximately \$0.45 per share to our existing stockholders and an immediate dilution in as-adjusted net tangible book value of approximately \$2.07 per share to purchasers of our common stock in this offering, as illustrated by the following table:

Assumed offering price per share	\$ 2.37
Net tangible book value per share as of March 31, 2014	\$(0.15)
Increase per share attributable to this offering	\$ 0.45
As-adjusted net tangible book value per share as of March 31, 2014, after giving effect to this offering	\$ 0.30
Dilution per share to new investors participating in this offering	\$ 2.07

The table above assumes, for illustrative purposes only, an aggregate of 16,877,637 shares of our common stock are sold at a price of \$2.37 per share, for aggregate gross proceeds of \$40,000,000. The shares, if any, sold in this offering will be sold from time to time at various prices. An increase of \$0.50 per share in the price at which the shares are sold from the assumed offering price of \$2.37 per share shown in the table above, assuming all of our common stock in the aggregate amount of \$40,000,000 is sold at that price, would increase the adjusted net tangible book value per share after the offering to \$0.31 per share and increase the dilution in net tangible book value per share to new investors in this offering to \$2.56 per share, after deducting commissions and estimated aggregate offering expenses payable by us. A decrease of \$0.50 per share in the price at which the shares are sold from the assumed offering price of \$2.37 per share shown in the table above, assuming all of our common stock in the aggregate amount of \$40,000,000 is sold at that price, would decrease the adjusted net tangible book value per share after the offering to \$0.28 per share and decrease the dilution in net tangible book value per share to new investors in this offering to \$1.59 per share, after deducting commissions and estimated aggregate offering expenses payable by us. This information is supplied for illustrative purposes only.

The amounts above are based on 75,458,551 shares of common stock outstanding as of March 31, 2014 and assume no exercise of outstanding options or warrants and no vesting of restricted stock awards since that date. The number of common stock expected to be outstanding after this offering excludes, as of March 31, 2014:

- 8,403,792 shares of common stock issuable upon the exercise of outstanding stock options, having a weighted average exercise price of \$4.53 per share;
- 157,441 shares of common stock issuable upon the vesting of outstanding restricted stock awards;
- 8,582,849 shares of our common stock issuable upon the exercise of outstanding warrants with a weighted-average exercise price of \$2.63 per share.

To the extent that any options or warrants are exercised, new options are issued under our equity incentive plan, additional shares of common stock are sold under our employee stock purchase plan or we otherwise issue additional shares of common stock in the future at prices per share below the price per share for any shares sold in this offering, there will be further dilution to new investors.

PLAN OF DISTRIBUTION

We have entered into a sales agreement with Cowen and Company, LLC, or Cowen, under which we may issue and sell from time to time shares of our common stock having an aggregate offering price of up to \$40,000,000 through Cowen as our sales agent. The form of sales agreement will be filed as an exhibit to a current report on Form 8-K and incorporated by reference in this prospectus supplement. Sales of the common stock, if any, will be made at market prices by any method permitted by law deemed to be an “at the market offering” as defined in Rule 415 under the Securities Act, including sales made through The NASDAQ Global Market and any other existing trading market for the common stock, or to or through a market maker. In addition, with our express authorization, Cowen may also sell our common stock in negotiated transactions.

Cowen will offer the common stock subject to the terms and conditions of the sales agreement on a daily basis or as otherwise agreed upon by us and Cowen. We will designate the maximum amount of common stock to be sold through Cowen on a daily basis or otherwise determine such maximum amount together with Cowen. Subject to the terms and conditions of the sales agreement, Cowen will use its commercially reasonable efforts to sell on our behalf all of the shares of common stock requested to be sold by us. We may instruct Cowen not to sell common stock if the sales cannot be effected at or above the price designated by us in any such instruction. We or Cowen may suspend the offering of the common stock being made through Cowen under the sales agreement upon proper notice to the other party. We and Cowen each have the right, by giving written notice as specified in the sales agreement, to terminate the sales agreement in each party’s sole discretion at any time.

The aggregate compensation payable to Cowen as sales agent will be up to 3.0% of the gross proceeds from the sales of our common stock pursuant to the sales agreement.

The remaining sales proceeds, after deducting any expenses payable by us and any transaction fees imposed by any governmental, regulatory, or self-regulatory organization in connection with the sales, will equal our net proceeds for the sale of such common stock.

Cowen will provide written confirmation to us following the close of trading on The NASDAQ Global Market as applicable, each day in which common stock is sold through it as sales agent under the sales agreement. Each confirmation will include the number of shares of common stock sold through it as sales agent on that day, the gross sales price per share, the net proceeds to us and the compensation payable by us to Cowen.

We will report at least quarterly the number of shares of common stock sold through Cowen under the sales agreement, the net proceeds to us and the compensation paid by us to Cowen in connection with the sales of common stock.

Settlement for sales of common stock will occur, unless the parties agree otherwise, on the third business day that is also a trading day following the date on which any sales were made in return for payment of the net proceeds to us. There is no arrangement for funds to be received in an escrow, trust or similar arrangement.

In connection with the sales of the common stock on our behalf, Cowen may be deemed to be an “underwriter” within the meaning of the Securities Act, and the compensation paid to Cowen may be deemed to be underwriting commissions or discounts. We have agreed in the sales agreement to provide indemnification and contribution to Cowen against certain liabilities, including liabilities under the Securities Act. In addition, we have agreed, under certain circumstances, to reimburse a portion of the expenses of Cowen incurred in connection with this offering up to a maximum of \$30,000. As sales agent, Cowen will not engage in any transactions that stabilize our common stock.

We estimate that the total expenses of the offering payable by us, excluding commissions payable to Cowen under the sales agreement, will be approximately \$250,000.

LEGAL MATTERS

The validity of the securities offered hereby will be passed upon for us by DLA Piper LLP (US), San Diego, California. Cowen and Company, LLC is being represented in connection with this offering by LeClairRyan, A Professional Corporation, New York, New York.

EXPERTS

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 ADDITIONAL INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. You may read and copy any reports, statements and other information filed by us at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Please call (800) SEC-0330 for further information on the Public Reference Room. The SEC maintains an Internet website that contains reports, proxy and information statements and other information regarding issuers, including us, that file electronically with the SEC. The address for the SEC's website is <http://www.sec.gov>.

We make available, free of charge, through our investor relations website, our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, statements of changes in beneficial ownership of securities and amendments to those reports and statements as soon as reasonably practicable after they are filed with the SEC. The address for our website is 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.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to incorporate by reference the information we file with it, which means that we can disclose important information to you by referring you to another document that we have filed separately with the SEC. You should read the information incorporated by reference because it is an important part of this prospectus supplement. We incorporate by reference the following information or documents that we have filed with the SEC (excluding those portions of any Form 8-K that are not deemed "filed" pursuant to the General Instructions of Form 8-K):

- Our Annual Report on Form 10-K for the year ended December 31, 2013, filed with the SEC on March 14, 2014, as amended by our Form 10-K/A filed with the SEC on April 30, 2014;
- Our Quarterly Report on Form 10-Q for the quarter ended March 31, 2014, filed with the SEC on May 12, 2014;
- Our Current Reports on Form 8-K filed with the SEC on February 4, 2014, April 2, 2014, and May 6, 2014; and

Table of Contents

- 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).

All reports and other documents we subsequently file pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act prior to the termination of this offering, including all such documents we may file with the SEC after the date of the initial registration statement and prior to the effectiveness of the registration statement, but excluding any information furnished to, rather than filed with, the SEC, will also be incorporated by reference into this prospectus supplement and deemed to be part of this prospectus supplement from the date of the filing of such reports and documents.

Any statement contained in any document incorporated by reference herein shall be deemed to be modified or superseded for purposes of this prospectus supplement to the extent that a statement contained in this prospectus supplement or any additional prospectus supplements 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 supplement.

We will provide without charge to each person, including any beneficial owner, to whom this prospectus supplement is delivered, upon written or oral request, a copy of any or all documents that are incorporated by reference into this prospectus supplement, but not delivered with the prospectus supplement, other than exhibits to such documents unless such exhibits are specifically incorporated by reference into the documents that this prospectus supplement incorporates. You should direct written requests to: Cytori Therapeutics, Inc., 3020 Callan Road, San Diego, CA 92121, Attn: Investor Relations, or you may call us at (858) 458-0900.

PROSPECTUS

\$100,000,000



CYTORI THERAPEUTICS, INC.

**Common Stock
Preferred Stock
Debt Securities
Warrants to Purchase Common Stock, Preferred Stock or Debt Securities
and Units**

We may from time to time in one or more offerings offer and sell up to \$100,000,000 aggregate dollar amount of common stock, preferred stock, debt securities, warrants to purchase common stock, preferred stock or debt securities, or any combination of the foregoing, either individually or as units comprised of one or more of the other securities. We will provide the specific terms for each of these securities in supplements to this prospectus. We may sell these securities to or through underwriters or dealers and also to other purchasers or through agents. We will set forth the names of any underwriters, dealers or agents in the accompanying prospectus supplement applicable to the sale of such securities. You should read carefully this prospectus and any supplement before you invest.

Where necessary, the applicable prospectus supplement will contain information about certain United States Federal income tax considerations relating to, and any listing on a securities exchange of, the securities covered by such prospectus supplement.

Our common stock is listed on The NASDAQ Global Market under the symbol "CYTX." On March 9, 2011, the last reported sale price of our common stock on The NASDAQ Global Market was \$6.77 per share and the last reported sale price of our warrants was \$4.58 per warrant.

Investing in our securities involves risk. See "[Risk Factors](#)" beginning on page 3.

This prospectus may not be used to offer or sell any securities unless it is accompanied by the applicable prospectus supplement.

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

The date of this prospectus is May 9, 2011.

TABLE OF CONTENTS

	<u>Page</u>
ABOUT THIS PROSPECTUS	ii
SUMMARY	1
RISK FACTORS	3
SPECIAL NOTE REGARDING FORWARD-LOOKING INFORMATION	3
RATIO OF EARNINGS TO FIXED CHARGES	4
USE OF PROCEEDS	4
SECURITIES WE MAY OFFER	5
DESCRIPTION OF COMMON STOCK AND PREFERRED STOCK	5
DESCRIPTION OF DEBT SECURITIES	9
DESCRIPTION OF WARRANTS	18
DESCRIPTION OF UNITS	19
PLAN OF DISTRIBUTION	20
LEGAL MATTERS	22
EXPERTS	22
WHERE YOU CAN FIND MORE INFORMATION	22
INCORPORATION OF CERTAIN INFORMATION BY REFERENCE	22

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, or the SEC, using a “shelf” registration process. Under this shelf registration process, we may from time to time in one or more offerings sell common stock, preferred stock, debt securities or warrants to purchase common stock, preferred stock or debt securities, or any combination of the foregoing, either individually or as units comprised of one or more of the other securities, in one or more offerings up to a total dollar amount of \$100,000,000. We have provided to you in this prospectus a general description of the securities we may offer. Each time we sell securities, we will, to the extent required by law, provide a prospectus supplement that will contain specific information about the terms of the offering. We may also add, update or change in any accompanying prospectus supplement or any related free writing prospectus we may authorize to be delivered to you any of the information contained in this prospectus. To the extent there is a conflict between the information contained in this prospectus and the prospectus supplement or any related free writing prospectus, you should rely on the information in the prospectus supplement or the related free writing prospectus, provided that if any statement in one of these documents is inconsistent with a statement in another document having a later date—for example, a document incorporated by reference in this prospectus or any prospectus supplement or any related free writing prospectus—the statement in the document having the later date modifies or supersedes the earlier statement.

We have not authorized any dealer, agent or other person to give any information or to make any representation other than those contained or incorporated by reference in this prospectus and any accompanying prospectus supplement. You must not rely upon any information or representation not contained or incorporated by reference in this prospectus or an accompanying prospectus supplement. This prospectus and the accompanying prospectus supplement, if any, do not constitute an offer to sell or the solicitation of an offer to buy any securities other than the registered securities to which they relate, nor do this prospectus and the accompanying prospectus supplement constitute an offer to sell or the solicitation of an offer to buy securities in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction. You should not assume that the information contained in this prospectus and the accompanying prospectus supplement, if any, is accurate on any date subsequent to the date set forth on the front of the document or that any information we have incorporated by reference is correct on any date subsequent to the date of the document incorporated by reference (as our business, financial condition, results of operations and prospects may have changed since that date), even though this prospectus and any accompanying prospectus supplement is delivered or securities are sold on a later date.

As permitted by the rules and regulations of the SEC, the registration statement, of which this prospectus forms a part, includes additional information not contained in this prospectus. You may read the registration statement and the other reports we file with the SEC at the SEC’s web site or at the SEC’s offices described below under the heading “Where You Can Find Additional Information.”

SUMMARY

This summary highlights selected information from this prospectus and does not contain all of the information that you need to consider in making your investment decision. You should carefully read the entire prospectus, including the risks of investing discussed under “Risk Factors” described on page 4, the information incorporated by reference, including our financial statements, and the exhibits to the registration statement of which this prospectus is a part. When used in this prospectus, the terms “CYTX”, “we”, “our”, “us” or the “Company” refer to Cytori Therapeutics, Inc. and its consolidated subsidiaries, unless otherwise indicated or as the context otherwise requires.

About Cytori Therapeutics, Inc.

Cytori develops, manufactures, and sells a portfolio of medical products and devices to enable the practice of regenerative medicine. Regenerative medicine describes the emerging field that aims to repair or restore lost or damaged tissue and cell function. By providing real-time access to naturally occurring stem and regenerative cells in fat tissue and optimized fat grafting technologies, we aim to address ischemic conditions and diseases, including soft tissue repair, acute heart attacks and chronic myocardial ischemia, along with a broad pipeline spanning cardiovascular disease, wound healing, gastrointestinal disorders, stress urinary incontinence, liver and renal disease, spinal disc degeneration and pelvic health conditions. To achieve our goal of making regenerative medicine available worldwide, we have partnered with Olympus Corporation, GE Healthcare, and Green Hospital Supply, Inc.

Our core technology is the patented Celution® family of products which processes patients’ adipose tissue to obtain adipose-derived stem and regenerative cells (ADRCs) at the point of care. The Celution® family of products consists of a central device, a related single-use consumable used for each patient procedure, proprietary enzyme reagents, and related instrumentation. Our commercialization model is based on the sale of Celution® Systems and on generating recurring revenues from the single-use consumable sets.

Our PureGraft™ System, or PureGraft™, formally launched in the United States in April 2010 at the meeting of the American Society of Aesthetic Plastic Surgery (ASAPS) following Food and Drug Administration, or FDA, clearance in January 2010, optimizes the preparation of autologous fat grafts. PureGraft™ is an innovative consumable product that provides consistent, quality grafts for use in aesthetic body contouring procedures. In Europe, PureGraft™ is sold as a complement to the Celution® System. We received the EU CE Mark for PureGraft™ in July 2010. In the United States, PureGraft™ is a strategic product that allows us to build relationships in the cosmetic and reconstructive surgery community while Celution® is under review by the FDA. In addition, we believe our PureGraft™ customer base will provide valuable sales leads, if Celution® is approved in the United States.

We also sell the StemSource® family of products worldwide, including in the United States, for research as well as for the cryopreservation and storage of ADRCs. The StemSource® System is offered as a standalone product, or as a part of a comprehensive suite of systems, equipment, and protocols for ADRC and fat tissue banking, collectively referred to as a StemSource® Cell Bank. The StemSource® Cell Bank is being marketed in Japan through our commercialization partner, Green Hospital Supply, Inc. (Green Hospital Supply) and in the United States by our direct sales team. The first U.S. StemSource® Bank was sold in Texas in May 2010.

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. Our website address is www.cytoritx.com. We make available free of charge through our Internet website our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act, as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. Information contained on our website does not constitute part of this prospectus or any prospectus supplement.

SECURITIES WE MAY OFFER

With this prospectus, we may offer common stock, preferred stock, debt securities and warrants, or any combination of the foregoing, either individually or as units comprised of one or more of the other securities. The aggregate initial offering price of all securities we sell in the primary offering under this prospectus will not exceed \$100,000,000. If we issue debt securities at a discount from their original stated principal amount, then, for purposes of calculating the total dollar amount of all securities issued under this prospectus, we will treat the initial offering price of the debt securities as the total original principal amount of the debt securities. Each time we offer securities with this prospectus, we will provide offerees with a prospectus supplement that will contain the specific terms of the securities being offered. The following is a summary of the securities we may offer with this prospectus.

We may sell the securities to or through underwriters, dealers or agents or directly to purchasers. We, as well as any agents acting on our behalf, reserve the sole right to accept and to reject in whole or in part any proposed purchase of securities. Each prospectus supplement will set forth the names of any underwriters, dealers or agents involved in the sale of securities described in that prospectus supplement and any applicable fee, commission or discount arrangements with them.

Common Stock

We may offer shares of our common stock, par value \$0.001 per share, either alone or underlying other registered securities convertible into or exercisable for our common stock. Holders of our common stock are entitled to such dividends as our board of directors may declare from time to time out of legally available funds, subject to the preferential rights of the holders of any shares of our preferred stock that are outstanding or that we may issue in the future. Currently, we do not pay any dividends. Each holder of our common stock is entitled to one vote per share. In this prospectus, we provide a general description of, among other things, our dividend policy and the rights and restrictions that apply to holders of our common stock.

Preferred Stock

We may issue shares of preferred stock in one or more classes or series. Our board of directors or a committee designated by our board of directors will determine the dividend, voting and conversion rights and other provisions at the time of sale. The particular terms of each class or series of preferred stock, including redemption privileges, liquidation preferences, voting rights, dividend rights and/or conversion rights, will be more fully described in the applicable prospectus supplement relating to the preferred stock offered thereby.

Debt Securities

We may offer general debt obligations, which may be secured or unsecured, senior or subordinated and convertible into shares of our common stock. In this prospectus, we refer to the senior debt securities and the subordinated debt securities together as the "debt securities." We may issue debt securities under a note purchase agreement or under an indenture to be entered between us and a trustee. A form of the indenture is included as an exhibit to the registration statement of which this prospectus is a part. The indenture does not limit the amount of securities that may be issued under it and provides that debt securities may be issued in one or more series. The senior debt securities will have the same rank as all of our other indebtedness that is not subordinated. The subordinated debt securities will be subordinated to our senior debt on terms set forth in the applicable prospectus supplement. In addition, the subordinated debt securities will be effectively subordinated to creditors and preferred stockholders of our subsidiaries. Our board of directors will determine the terms of each series of debt securities being offered. This prospectus contains only general terms and provisions of the debt securities. The applicable prospectus supplement will describe the particular terms of the debt securities offered thereby.

Warrants

We may offer warrants for the purchase of debt securities, shares of preferred stock or shares of common stock. We may issue the warrants by themselves or together with debt securities, preferred stock or common stock and the warrants may be attached to or separate from any offered securities. Each series of securities warrants will be issued under a separate warrant agreement to be entered into between us and the investors or a warrant agent. Our board of directors will determine the terms of the warrants. This prospectus contains only general terms and provisions of the warrants. The applicable prospectus supplement will describe the particular terms of the warrants being offered thereby.

RISK FACTORS

Investment in our securities involves risks. Prior to making a decision about investing in our securities, you should consider carefully the risk factors, together with all of the other information contained or incorporated by reference in this prospectus and any prospectus supplement, including any additional specific risks described in the section entitled "Risk Factors" contained in any supplements to this prospectus and in our Annual Report on Form 10-K for the fiscal year ended December 31, 2010 filed with the SEC, as well as any amendments thereto reflected in subsequent filings with the SEC, which are incorporated herein by reference in their entirety. Each of these risk factors could have a material adverse affect on our business, results of operations, financial position or cash flows, which may result in the loss of all or part of your investment.

SPECIAL NOTE REGARDING FORWARD-LOOKING INFORMATION

This prospectus, including the documents that we incorporate by reference herein, contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Exchange Act. These statements include, but are not limited to, statements about 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 approvals and clearances to sell our products, expectations as to our future performance, our need for additional financing and the availability thereof, and the potential enhancement of our cash position through development, marketing, and licensing arrangements. Any statements about our expectations, beliefs, plans, objectives, assumptions or future events or performance are not historical facts and may be forward-looking. These statements are often, but not always, made through the use of terminology such as "anticipates," "believes," "continue" "estimates," "expects," "intends," "may," "plans," "potential," "predicts," "should," "will," or the negative of these terms or other comparable terminology. These forward-looking statements may also use different phrases. Accordingly, these statements involve estimates, assumptions and uncertainties that could cause actual results to differ materially from those expressed in them. Any forward-looking statement is qualified in its entirety by reference to the factors discussed in this prospectus, including in the documents incorporated by reference herein.

Because the factors discussed in this prospectus, including in the documents incorporated by reference herein, and even factors of which we are not yet aware, could cause actual results or outcomes to differ materially from those expressed in any forward-looking statement made by or on behalf of us, you should not place undue reliance on any such forward-looking statement. These statements are subject to risks and uncertainties, known and unknown, which could cause actual results, performance and achievements to differ materially from those expressed or implied in such statements. We have included important factors in the cautionary statements included in this prospectus, particularly under the heading "Risk Factors," and in our SEC filings that we believe could cause actual results or events to differ materially from the forward-looking statements that we make. These and other risks are also detailed in our reports filed from time to time under the Securities Act and/or the Exchange Act. You are encouraged to read these filings as they are made.

[Table of Contents](#)

Further, any forward-looking statement speaks only as of the date on which it is made, and we undertake no obligation to update any forward-looking statement to reflect events or circumstances after the date on which such statement is made or to reflect the occurrence of unanticipated events. New risk factors emerge from time to time, and it is not possible for us to predict which factors will arise. In addition, we cannot assess the impact of each factor on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements.

RATIO OF EARNINGS TO FIXED CHARGES

We present below our ratio of earnings to fixed charges. Earnings available to cover fixed charges consist of loss from continuing operations before income taxes plus fixed charges. Fixed charges consist of interest expense and the portion of rental expense we believe to be representative of interest.

	Year Ended December 31,				
	2010	2009	2008	2007	2006
Earnings available to cover fixed charges:	\$ (24,999)	\$ (21,476)	\$ (29,294)	\$ (28,190)	\$ (24,772)
Fixed charges:	2,665	1,894	1,147	475	601
Ratio of earnings to fixed charges:	\$ —	\$ —	\$ —	\$ —	\$ —

For all periods presented, earnings are insufficient to cover fixed charges. Coverage is deficient by the following amounts:

	<u>\$ (27,664)</u>	<u>\$ (23,370)</u>	<u>\$ (30,441)</u>	<u>\$ (28,655)</u>	<u>\$ (25,373)</u>
--	--------------------	--------------------	--------------------	--------------------	--------------------

USE OF PROCEEDS

Except as described in any prospectus supplement, we currently intend to use the net proceeds from the sale of the securities 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. In addition our use of proceeds may include the repayment of debt or refinancing of indebtedness or the acquisition of complementary products or companies.

We have not determined the amount of net proceeds to be used specifically for the foregoing purposes. As a result, our management will have broad discretion in the allocation of the net proceeds and investors will be relying on the judgment of our management regarding the application of the proceeds of any sale of the securities. Pending use of the net proceeds, we intend to invest the proceeds in a variety of capital preservation instruments, including short-term, investment-grade, interest-bearing instruments.

When we offer a particular series of securities, we will describe the intended use of the net proceeds from that offering in a prospectus supplement. The actual amount of net proceeds we spend on a particular use will depend on many factors, including, our future revenue growth, if any, our future capital expenditures and the amount of cash required by our operations. Many of these factors are beyond our control. Therefore, we will retain broad discretion in the use of the net proceeds.

SECURITIES WE MAY OFFER

We may offer shares of common stock, shares of preferred stock, debt securities or warrants to purchase common stock, preferred stock or debt securities, or any combination of the foregoing, either individually or as units comprised of one or more of the other securities. We may offer up to \$100,000,000 of securities under this prospectus. If securities are offered as units, we will describe the terms of the units in a prospectus supplement.

DESCRIPTION OF COMMON STOCK AND PREFERRED STOCK

The following description of our common stock and preferred stock, together with any additional information we include in any applicable prospectus supplements, summarizes the material terms and provisions of our common stock and the preferred stock that we may offer in offerings under this prospectus. While the terms we have summarized below will apply generally to any future common stock or preferred stock that we may offer, we will describe the particular terms of any class or series of these securities in more detail in the applicable prospectus supplement. For the complete terms of our common stock and preferred stock, please refer to our amended and restated certificate of incorporation and our amended and restated bylaws that are incorporated by reference into the registration statement of which this prospectus is a part or may be incorporated by reference in this prospectus or any prospectus supplement. The terms of these securities may also be affected by Delaware General Corporation Law. The summary below and that contained in any prospectus supplement are qualified in their entirety by reference to our amended and restated certificate of incorporation and our amended and restated bylaws.

Common Stock

We are authorized to issue 95,000,000 shares of common stock, of which 51,996,191 shares were issued and outstanding as of March 9, 2011. 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 conversion of any preferred stock or debt securities or exercise of any warrants offered pursuant to this prospectus, 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."

Transfer Agent and Registrar

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

Rights Plan

On May 28, 2003, we adopted a stockholder rights plan, or Rights Plan. The description and terms of the rights issuable under the Rights Plan are set forth in a Rights Agreement between us and Computershare Trust Company, Inc., as rights agent, dated as of May 29, 2003. Under the Rights Plan, we distributed one Series RP preferred stock purchase right for each share of common stock outstanding at the close of business on June 10, 2003.

If a person or group of affiliated or associated persons acquires 15% or more of our common stock in a transaction not pre-approved by our Board of Directors, each right will entitle its holder, other than the acquirer, to receive upon exercise the number of shares of our common stock (or, in certain circumstances, of one one-thousandths of a share of preferred stock or other of our securities) having a value equal to two times the right's then-applicable purchase price (initially \$25.00 per one-thousandth of a share of Series RP preferred stock). In addition, if an unapproved party acquires 15% or more of our common stock, and we are later acquired by the unapproved party or in a transaction in which all of our stockholders are not treated alike, stockholders with unexercised rights, other than the unapproved party, will be entitled to purchase common stock of the merger party or asset buyer with a value of twice the exercise price of the rights. Each right also becomes exercisable for one one-thousandth of a share of our Series RP preferred stock at the right's then current exercise price 10 days after an unapproved person or group of affiliated or associated persons commences, or announces an intention to make, a tender offer or exchange offer that, if completed, would result in the unapproved party acquiring 15% or more of our common stock. We may redeem the rights for a nominal amount before an event that causes the rights to become exercisable.

Until a right is exercised, the holder thereof, as such, will have no rights as a stockholder of us, including, without limitation, the right to vote or to receive dividends. While the distribution of the rights will not be taxable to our stockholders, stockholders may, depending upon the circumstances, recognize taxable income should the rights become exercisable or upon the occurrence of certain events thereafter. As long as the rights are attached to the shares of common stock, we will issue one right with each new share of common stock so that all shares of our common stock will have attached rights. The rights will expire on May 29, 2013, unless earlier redeemed by us.

On May 12, 2005, we amended the Rights Plan to change the threshold at which the rights separate from the common stock, from 15% to 20%, in the case of one of our stockholders, Neil Gagnon, either individually or together with his affiliates, including without limitation Gagnon Securities LLC and its affiliates (all together "Gagnon"). The effect of this amendment is to enable Gagnon to safely increase his beneficial ownership to above 15% (although not to above 20%) without thereby triggering distribution of the rights.

On August 28, 2007, we amended the Rights Plan to change the threshold at which the rights separate from the common stock, from 15% to 20%, in the case of one of our stockholders, Olympus Corporation. The effect of this amendment is to enable Olympus Corporation to safely increase its beneficial ownership to above 15% (although not to above 20%) without thereby triggering distribution of the rights.

The Rights Agreement, specifying the terms of the rights, including the form of Certificate of Designation, Preferences and Rights of our Series RP preferred stock as an exhibit thereto, is attached as an exhibit to our registration statement on Form 8-A filed with the SEC on May 30, 2003 and is incorporated herein by reference. Amendment No. 1 to Rights Agreement, dated as of May 12, 2005, between us and Computershare Trust Company, Inc., as rights agent, is attached as an exhibit to our current report on Form 8-K filed with the SEC on May 18, 2005, and Amendment No. 2 to Rights Agreement, dated as of August 28, 2007, between us and Computershare Trust Company, Inc., as rights agent, is attached as an exhibit to our current report on Form 8-K filed with the SEC on August 28, 2007. The foregoing description of the rights is qualified in its entirety by reference to the Rights Agreement, as amended, and the exhibits thereto.

Preferred Stock

We are authorized to issue 5,000,000 shares of preferred stock, none of which were issued and outstanding as of March 9, 2011. Our board is authorized 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. We may issue preferred stock from time to time in one or more classes or series, with the exact terms of each class or series established by our board. Without seeking stockholder approval, our board may issue preferred stock with voting and other rights that could adversely affect the voting power of the holders of our common stock. Additionally, the issuance of preferred stock may have the effect of decreasing the market price of the common stock.

The rights, preferences, privileges and restrictions of the preferred stock of each series will be fixed by the certificate of designation relating to each series. A prospectus supplement relating to each series will specify the terms of the preferred stock, including, but not limited to:

- the distinctive designation and the maximum number of shares in the series;
- the terms on which dividends, if any, will be paid;
- the voting rights, if any, on the shares of the series;
- the terms and conditions, if any, on which the shares of the series shall be convertible into, or exchangeable for, shares of any other class or classes of capital stock;
- the terms on which the shares may be redeemed, if at all;
- the liquidation preference, if any; and
- any or all other preferences, rights, restrictions, including restrictions on transferability, and qualifications of shares of the series.

The issuance of preferred stock may delay, deter or prevent a change in control.

We will describe the specific terms of a particular series of preferred stock in the prospectus supplement relating to that series. The description of preferred stock above and the description of the terms of a particular series of preferred stock in the prospectus supplement are not complete. You should refer to the applicable certificate of designation for complete information. The prospectus supplement will contain a description of U.S. federal income tax consequences relating to the preferred stock.

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

The following is a summary of certain provisions of Delaware law, our amended and restated certificate of incorporation and our amended and restated bylaws. This summary does not purport to be complete and is qualified in its entirety by reference to the corporate law of Delaware and our amended and restated certificate of incorporation and amended and restated bylaws.

Effect of Delaware Anti-Takeover Statute. We are subject to Section 203 of the Delaware General Corporation Law, an anti-takeover law. In general, Section 203 prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years following the date that the stockholder became an interested stockholder, unless:

- prior to that date, the board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;
- upon consummation of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the number

[Table of Contents](#)

of shares of voting stock outstanding (but not the voting stock owned by the interested stockholder) those shares owned by persons who are directors and officers and by excluding employee stock plans in which employee participants do not have the right to determine whether shares held subject to the plan will be tendered in a tender or exchange offer; or

- on or subsequent to that date, the business combination is approved by the board of directors of the corporation and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66 ²/₃% of the outstanding voting stock that is not owned by the interested stockholder.

Section 203 defines “business combination” to include the following:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder;
- subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- any transaction involving the corporation that has the effect of increasing the proportionate share of the stock of any class or series of the corporation beneficially owned by the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

In general, Section 203 defines an interested stockholder as any entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation, or who beneficially owns 15% or more of the outstanding voting stock of the corporation at anytime within a three year period immediately prior to the date of determining whether such person is an interested stockholder, and any entity or person affiliated with or controlling or controlled by any of these entities or persons.

Certificate of Incorporation and Bylaws

Preferred Stock. Under our amended and restated certificate of incorporation, our Board of Directors has the power to authorize the issuance of up to 5,000,000 shares of preferred stock, all of which remain undesignated, and to determine the price, rights, preferences, privileges and restrictions, including voting rights, of those shares without further vote or action by our stockholders. The issuance of preferred stock may:

- delay, defer or prevent a change in control;
- discourage bids for our common stock at a premium over the market price of our common stock;
- adversely affect the voting and other rights of the holders of our common stock; and
- discourage acquisition proposals or tender offers for our shares and, as a consequence, inhibit fluctuations in the market price of our shares that could result from actual or rumored takeover attempts.

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.

Advance Notice Requirement. Stockholder proposals to be brought before an annual meeting of our stockholders must comply with advance notice procedures. These advance notice procedures require timely notice and apply in several situations, including stockholder proposals relating to the nominations of persons for

[Table of Contents](#)

election to our Board of Directors. Generally, to be timely, notice must be received at our principal executive offices no later than the date specified in our proxy statement released to stockholders in connection with the previous year's annual meeting of stockholders, which date shall be not less than 120 calendar days in advance of the date of such proxy statement.

Indemnification. Our amended and restated certificate of incorporation and our bylaws, as amended, provide that we will indemnify our officers and directors against losses as they incur in investigations and legal proceedings resulting from their services to us, which may include service in connection with takeover defense measures.

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

Rights Agreement

The rights described above under the heading "Description of Common Stock and Preferred Stock—Rights Plan" above have certain anti-takeover effects. The rights will cause substantial dilution to a person or group that attempts to acquire a significant interest in us on terms not approved by our Board of Directors.

DESCRIPTION OF DEBT SECURITIES

General

The debt securities that we may issue may constitute debentures, notes, bonds or other evidences of indebtedness of Cytori Therapeutics, Inc., to be issued in one or more series, which may include senior debt securities, subordinated debt securities and senior subordinated debt securities. The particular terms of any series of debt securities we offer, including the extent to which the general terms set forth below may be applicable to a particular series, will be described in a prospectus supplement relating to such series.

Debt securities that we may issue may be issued under a senior indenture between us and a trustee, or a subordinated indenture between us and a trustee (collectively, the "indenture"). We have filed forms of the indentures as exhibits to the registration statement of which this prospectus is a part. If we enter into any revised indenture or indenture supplement, we will file a copy of that supplement with the SEC.

THE FOLLOWING DESCRIPTION IS A SUMMARY OF THE MATERIAL PROVISIONS OF THE INDENTURE. IT DOES NOT RESTATE THE INDENTURE IN ITS ENTIRETY. THE INDENTURE IS GOVERNED BY THE TRUST INDENTURE ACT OF 1939. THE TERMS OF THE DEBT SECURITIES INCLUDE THOSE STATED IN THE INDENTURE AND THOSE MADE PART OF THE INDENTURE BY REFERENCE TO THE TRUST INDENTURE ACT. WE URGE YOU TO READ THE INDENTURE BECAUSE IT, AND NOT THIS DESCRIPTION, DEFINES YOUR RIGHTS AS A HOLDER OF THE DEBT SECURITIES.

The indenture contains no covenant or provision which affords debt holders protection in the event of a highly leveraged transaction.

Information You Will Find in the Prospectus Supplement

The indenture provides that we may issue debt securities from time to time in one or more series by resolution of our board of directors or by means of a supplemental indenture, and that we may denominate the debt securities and make them payable in foreign currencies. The indenture does not limit the aggregate principal amount of debt securities that can be issued thereunder. The prospectus supplement for a series of debt securities will provide information relating to the terms of the series of debt securities being offered, which may include:

- the title and denominations of the debt securities of the series;

Table of Contents

- any limit on the aggregate principal amount of the debt securities of the series;
- the date or dates on which the principal and premium, if any, with respect to the debt securities of the series are payable or the method of determination thereof;
- the rate or rates, which may be fixed or variable, at which the debt securities of the series shall bear interest, if any, or the method of calculating and/or resetting such rate or rates of interest;
- the dates from which such interest shall accrue or the method by which such dates shall be determined and the basis upon which interest shall be calculated;
- the interest payment dates for the series of debt securities or the method by which such dates will be determined, the terms of any deferral of interest and any right of ours to extend the interest payments periods;
- the place or places where the principal and interest on the series of debt securities will be payable;
- the terms and conditions upon which debt securities of the series may be redeemed, in whole or in part, at our option or otherwise;
- our obligation, if any, to redeem, purchase, or repay debt securities of the series pursuant to any sinking fund or other specified event or at the option of the holders and the terms of any such redemption, purchase, or repayment;
- the terms, if any, upon which the debt securities of the series may be convertible into or exchanged for other securities, including, among other things, the initial conversion or exchange price or rate and the conversion or exchange period;
- if the amount of principal, premium, if any, or interest with respect to the debt securities of the series may be determined with reference to an index or formula, the manner in which such amounts will be determined;
- if any payments on the debt securities of the series are to be made in a currency or currencies (or by reference to an index or formula) other than that in which such securities are denominated or designated to be payable, the currency or currencies (or index or formula) in which such payments are to be made and the terms and conditions of such payments;
- any changes or additions to the provisions of the indenture dealing with defeasance, including any additional covenants that may be subject to our covenant defeasance option;
- the currency or currencies in which payment of the principal and premium, if any, and interest with respect to debt securities of the series will be payable, or in which the debt securities of the series shall be denominated, and the particular provisions applicable thereto in accordance with the indenture;
- the portion of the principal amount of debt securities of the series which will be payable upon declaration of acceleration or provable in bankruptcy or the method by which such portion or amount shall be determined;
- whether the debt securities of the series will be secured or guaranteed and, if so, on what terms;
- any addition to or change in the events of default with respect to the debt securities of the series;
- the identity of any trustees, authenticating or paying agents, transfer agents or registrars;
- the applicability of, and any addition to or change in, the covenants currently set forth in the indenture;
- the subordination, if any, of the debt securities of the series and terms of the subordination;
- any other terms of the debt securities of the series; and
- whether securities of the series shall be issuable as registered securities or bearer securities (with or without interest coupons), and any restrictions applicable to the offering, sale or delivery of such bearer securities and the terms upon which such bearer securities of a series may be exchanged for registered securities, and vice versa.

[Table of Contents](#)

Holders of debt securities may present debt securities for exchange in the manner, at the places, and subject to the restrictions set forth in the debt securities, the indenture, and the prospectus supplement. We will provide these services without charge, other than any tax or other governmental charge payable in connection therewith, but subject to the limitations provided in the indenture, any board resolution establishing such debt securities and any applicable indenture supplement. Debt securities in bearer form and the coupons, if any, appertaining thereto will be transferable by delivery.

Senior Debt

We may issue senior debt securities under the indenture and any coupons that will constitute part of our senior debt. Unless otherwise set forth in the applicable indenture supplement or in any board resolution establishing such debt securities and described in a prospectus supplement, the senior debt securities will be senior unsecured obligations, ranking equally with all of our existing and future senior unsecured debt. The senior debt securities will be senior to all of our subordinated debt and junior to any secured debt we may incur as to the assets securing such debt.

Subordinated Debt

We may issue subordinated debt securities under the indenture and any coupons that will constitute part of such subordinated debt. These subordinated debt securities will be subordinate and junior in right of payment, to the extent and in the manner set forth in the indenture and any applicable indenture supplement, to all of our senior indebtedness.

If this prospectus is being delivered in connection with a series of subordinated debt securities, the accompanying prospectus supplement or the information incorporated by reference will set forth the approximate amount of senior indebtedness, if any, outstanding as of the end of our most recent fiscal quarter.

Senior Subordinated Debt

We may issue senior subordinated debt securities under the indenture and any coupons that will constitute part of our senior subordinated debt. These senior subordinated debt securities will be, to the extent and in the manner set forth in the indenture, subordinate and junior in right of payment to all of our “senior indebtedness” and senior to our other subordinated debt. See the discussions above under “—Senior Debt” and “—Subordinated Debt” for a more detailed explanation of our senior and subordinated indebtedness.

Interest Rate

Debt securities that bear interest will do so at a fixed rate or a floating rate. We may sell, at a discount below the stated principal amount, any debt securities which bear no interest or which bear interest at a rate that at the time of issuance is below the prevailing market rate. The relevant prospectus supplement will describe the special United States federal income tax considerations applicable to:

- any discounted debt securities; and
- any debt securities issued at par which are treated as having been issued at a discount for United States federal income tax purposes.

Registered Global Securities

We may issue registered debt securities of a series in the form of one or more fully registered global securities. We will deposit the registered global security with a depository or with a nominee for a depository identified in the prospectus supplement relating to such series. The global security or global securities will represent and will be in a denomination or aggregate denominations equal to the portion of the aggregate

[Table of Contents](#)

principal amount of outstanding registered debt securities of the series to be represented by the registered global security or securities. Unless it is exchanged in whole or in part for debt securities in definitive registered form, a registered global security may not be transferred, except as a whole in three cases:

- by the depositary for the registered global security to a nominee of the depositary;
- by a nominee of the depositary to the depositary or another nominee of the depositary; and
- by the depositary or any nominee to a successor of the depositary or a nominee of the successor.

The prospectus supplement relating to a series of debt securities will describe the specific terms of the depositary arrangement concerning any portion of that series of debt securities to be represented by a registered global security. We anticipate that the following provisions will generally apply to all depositary arrangements.

Upon the issuance of a registered global security, the depositary will credit, on its book-entry registration and transfer system, the principal amounts of the debt securities represented by the registered global security to the accounts of persons that have accounts with the depositary. These persons are referred to as “participants.” Any underwriters, agents or debtors participating in the distribution of debt securities represented by the registered global security will designate the accounts to be credited. Only participants or persons that hold interests through participants will be able to beneficially own interests in a registered global security. The depositary for a global security will maintain records of beneficial ownership interests in a registered global security for participants. Participants or persons that hold through participants will maintain records of beneficial ownership interests in a global security for persons other than participants. These records will be the only means to transfer beneficial ownership in a registered global security.

The laws of some states may require that specified purchasers of securities take physical delivery of the securities in definitive form. These laws may limit the ability of those persons to own, transfer or pledge beneficial interests in global securities.

So long as the depositary, or its nominee, is the registered owner of a registered global security, the depositary or its nominee will be considered the sole owner or holder of the debt securities represented by the registered global security for all purposes under the indenture. Except as set forth below, owners of beneficial interests in a registered global security:

- may not have the debt securities represented by a registered global security registered in their names;
- will not receive or be entitled to receive physical delivery of debt securities represented by a registered global security in definitive form; and
- will not be considered the owners or holders of debt securities represented by a registered global security under the indenture.

Accordingly, each person owning a beneficial interest in a registered global security must rely on the procedures of the depositary for the registered global security and, if the person is not a participant, on the procedures of the participant through which the person owns its interests, to exercise any rights of a holder under the indenture applicable to the registered global security.

We understand that, under existing industry practices, if we request any action of holders, or if an owner of a beneficial interest in a registered global security desires to give or take any action which a holder is entitled to give or take under the indenture, the depositary for the registered global security would authorize the participants holding the relevant beneficial interests to give or take the action, and the participants would authorize beneficial owners owning through the participants to give or take the action or would otherwise act upon the instructions of beneficial owners holding through them.

[Table of Contents](#)

Payment of Interest on and Principal of Registered Global Securities

We will make principal, premium, if any, and interest payments on debt securities represented by a registered global security registered in the name of a depository or its nominee to the depository or its nominee as the registered owner of the registered global security. None of Cytori, the trustee, or any paying agent for debt securities represented by a registered global security will have any responsibility or liability for:

- any aspect of the records relating to, or payments made on account of, beneficial ownership interests in such registered global security;
- maintaining, supervising, or reviewing any records relating to beneficial ownership interests;
- the payments to beneficial owners of the global security of amounts paid to the depository or its nominee; or
- any other matter relating to the actions and practices of the depository, its nominee or any of its participants.

We expect that the depository, upon receipt of any payment of principal, premium or interest in respect of the global security, will immediately credit participants' accounts with payments in amounts proportionate to their beneficial interests in the principal amount of a registered global security as shown on the depository's records. We also expect that payments by participants to owners of beneficial interests in a registered global security held through participants will be governed by standing instructions and customary practices. This is currently the case with the securities held for the accounts of customers registered in "street name." Such payments will be the responsibility of participants.

Exchange of Registered Global Securities

We may issue debt securities in definitive form in exchange for the registered global security if both of the following occur:

- the depository for any debt securities represented by a registered global security is at any time unwilling or unable to continue as depository or ceases to be a clearing agency registered under the Exchange Act; and
- we do not appoint a successor depository within 90 days.

In addition, we may, at any time, determine not to have any of the debt securities of a series represented by one or more registered global securities. In this event, we will issue debt securities of that series in definitive form in exchange for all of the registered global security or securities representing those debt securities.

Our Covenants

The indenture includes covenants by us, including among other things that we will make all payments of principal and interest at the times and places required. The board resolution or supplemental indenture establishing each series of debt securities may contain additional covenants, including covenants which could restrict our right to incur additional indebtedness or liens and to take certain actions with respect to our businesses and assets.

Events of Default

Unless otherwise indicated in the applicable prospectus supplement, the following will be events of default under the indenture with respect to each series of debt securities issued under the indenture:

- failure to pay when due any interest on any debt security of that series that continues for 30 days;
- failure to pay when due the principal of, or premium, if any, on, any debt security of that series;

Table of Contents

- default in the payment of any sinking fund installment with respect to any debt security of that series when due and payable;
- failure to perform any other covenant or agreement of ours under the indenture or the supplemental indenture with respect to that series or the debt securities of that series, continued for 90 days after written notice to us by the trustee or holders of at least 25% in aggregate principal amount of the outstanding debt securities of the series to which the covenant or agreement relates;
- certain events of bankruptcy, insolvency or similar proceedings affecting us and our subsidiaries; and
- any other event of default specified in any supplemental indenture under which such series of debt securities is issued.

Except as to certain events of bankruptcy, insolvency or similar proceedings affecting us and except as provided in the applicable prospectus supplement, if any event of default shall occur and be continuing with respect to any series of debt securities under the indenture, either the trustee or the holders of at least 25% in aggregate principal amount of outstanding debt securities of such series may accelerate the maturity of all debt securities of such series. Upon certain events of bankruptcy, insolvency or similar proceedings affecting us, the principal, premium, if any, and interest on all debt securities of each series shall be immediately due and payable.

After any such acceleration, but before a judgment or decree based on acceleration has been obtained by the trustee, the holders of a majority in aggregate principal amount of each affected series of debt securities may waive all defaults with respect to such series and rescind and annul such acceleration if all events of default, other than the non-payment of accelerated principal, have been cured, waived or otherwise remedied.

No holder of any debt securities will have any right to institute any proceeding with respect to the indenture or for any remedy under the indenture, unless such holder shall have previously given to the trustee written notice of a continuing event of default and the holders of at least 25% in aggregate principal amount of the outstanding debt securities of the relevant series shall have made written request and offered indemnity satisfactory to the trustee to institute such proceeding as trustee, and the trustee shall not have received from the holders of a majority in aggregate principal amount of the outstanding debt securities of such series a direction inconsistent with such request and shall have failed to institute such proceeding within 60 days. However, such limitations do not apply to a suit instituted by a holder of a debt security for enforcement of payment of the principal of and premium, if any, or interest on such debt security on or after the respective due dates expressed in such debt security.

Supplemental Indentures

We and the trustee may, at any time and from time to time, without prior notice to or consent of any holders of debt securities after issuance of such debt securities, enter into one or more supplemental indentures to, among other things:

- add guarantees to or secure any series of debt securities;
- add any additional events of default;
- provide for the succession of another person pursuant to the provisions of the indenture relating to consolidations, mergers and sales of assets and the assumption by such successor of our covenants, agreements, and obligations, or to otherwise comply with the provisions of the indenture relating to consolidations, mergers, and sales of assets;
- surrender any right or power conferred upon us under the indenture or to add to our covenants further covenants, restrictions, conditions or provisions for the protection of the holders of all or any series of debt securities;

Table of Contents

- cure any ambiguity or to correct or supplement any provision contained in the indenture, in any supplemental indenture or in any debt securities that may be defective or inconsistent with any other provision contained therein, so long as any such action does not adversely affect the interests of the holders of debt securities of any series in any material respect;
- add or change or eliminate any of the provisions of the indenture to extent as shall be necessary to permit or facilitate the issuance of debt securities in bear form, registrable or not registrable as to principal, and with or without interest coupons;
- add to or change any of the provisions of the indenture to permit the defeasance and discharge of any series of debt securities pursuant to the indenture;
- change, or eliminate any of the provisions of the indenture provided that any such change or elimination shall become effective only when there are no debt securities outstanding of any series created prior to the execution of such supplemental indenture;
- evidence and provide for the acceptance of appointment by a successor or separate trustee; and
- establish the form or terms of debt securities of any series and to make any change that does not adversely affect the interests of the holders of debt securities.

With the consent of the holders of at least a majority in principal amount of debt securities of each series affected by such supplemental indenture (each series voting as one class), we and the trustee may enter into one or more supplemental indentures for the purpose of adding any provisions to or changing in any manner or eliminating any of the provisions of the indenture or modifying in any manner the rights of the holders of debt securities of each such series.

Notwithstanding our rights and the rights of the trustee to enter into one or more supplemental indentures with the consent of the holders of debt securities of the affected series as described above, no such supplemental indenture to be entered into after issuance of the debt securities shall, without the consent of the holder of each outstanding debt security of the affected series, among other things:

- change the final maturity of the principal of, or any installment of interest on, any debt securities;
- reduce the principal amount of any debt securities or the rate of interest on any debt securities;
- change the currency in which any debt securities are payable;
- release any security interest that may have been granted with respect to such debt securities;
- impair the right of the holders to conduct a proceeding for any remedy available to the trustee;
- reduce the percentage in principal amount of any series of debt securities whose holders must consent to an amendment or supplemental indenture;
- modify the ranking or priority of the securities;
- reduce any premium payable upon the redemption of any debt securities or change the time at which any debt security may be redeemed; or
- make any change that adversely affects the relative rights of holders of subordinated debt securities with respect to senior debt securities.

Satisfaction and Discharge of the Indenture; Defeasance

Except to the extent set forth in a supplemental indenture with respect to any series of debt securities, we, at our election, may discharge the indenture and the indenture shall generally cease to be of any further effect with respect to that series of debt securities if (a) we have delivered to the trustee for cancellation all debt securities of that series (with certain limited exceptions) or (b) all debt securities of that series not previously delivered to the

Table of Contents

trustee for cancellation shall have become due and payable, or are by their terms to become due and payable within one year or are to be called for redemption within one year, and we have deposited with the trustee the entire amount sufficient to pay at maturity or upon redemption all such debt securities.

In addition, we have a “legal defeasance option” (pursuant to which we may terminate, with respect to the debt securities of a particular series, all of our obligations under such debt securities and the indenture with respect to such debt securities) and a “covenant defeasance option” (pursuant to which we may terminate, with respect to the debt securities of a particular series, our obligations with respect to such debt securities under certain specified covenants contained in the indenture). If we exercise our legal defeasance option with respect to a series of debt securities, payment of such debt securities may not be accelerated because of an event of default. If we exercise our covenant defeasance option with respect to a series of debt securities, payment of such debt securities may not be accelerated because of an event of default related to the specified covenants.

We may exercise our legal defeasance option or our covenant defeasance option with respect to the debt securities of a series only if we irrevocably deposit in trust with the trustee cash or U.S. government obligations (as defined in the indenture) for the payment of principal, premium, if any, and interest with respect to such debt securities to maturity or redemption, as the case may be. In addition, to exercise either of our defeasance options, we must comply with certain other conditions, including the delivery to the trustee of an opinion of counsel to the effect that the holders of debt securities of such series will not recognize income, gain or loss for Federal income tax purposes as a result of such defeasance and will be subject to Federal income tax on the same amounts, in the same manner and at the same times as would have been the case if such defeasance had not occurred (and, in the case of legal defeasance only, such opinion of counsel must be based on a ruling from the Internal Revenue Service or other change in applicable Federal income tax law).

The trustee will hold in trust the cash or U.S. government obligations deposited with it as described above and will apply the deposited cash and the proceeds from deposited U.S. government obligations to the payment of principal, premium, if any, and interest with respect to the debt securities of the defeased series. In the case of subordinated debt securities, the money and U.S. government obligations held in trust will not be subject to the subordination provisions of the indenture.

Mergers, Consolidations and Certain Sales of Assets

Under the proposed form of indenture, we may not (1) consolidate with or merge into any other person or entity or permit any other person or entity to consolidate with or merge into us in a transaction in which we are not the surviving entity, or (2) transfer, lease or dispose of all or substantially all of our assets to any other person or entity unless:

- the resulting, surviving or transferee entity shall be a corporation organized and existing under the laws of the United States or any state thereof and such resulting, surviving or transferee entity shall expressly assume, by supplemental indenture, all of our obligations under the debt securities and the indenture;
- immediately after giving effect to such transaction (and treating any indebtedness which becomes an obligation of the resulting, surviving or transferee entity as a result of such transaction as having been incurred by such entity at the time of such transaction), no default or event of default would occur or be continuing; and
- we shall have delivered to the trustee an officers’ certificate and an opinion of counsel, each stating that such consolidation, merger or transfer and such supplemental indenture (if any) comply with the indenture.

Governing Law

The indenture and the debt securities will be governed by the laws of the State of New York.

[Table of Contents](#)

No Personal Liability of Directors, Officers, Employees and Stockholders

None of our directors, officers or stockholders shall have any liability for any of our obligations under the debt securities or the indenture or for any claim based on, in respect of, or by reason of, such obligations or their creation, solely by reason of his, her, or its status as director, officer or stockholder. By accepting a debt security, each holder waives and releases all such liability, but only such liability. The waiver and release are part of the consideration for issuance of the debt securities. Nevertheless, such waiver may not be effective to waive liabilities under the federal securities laws and it has been the view of the SEC that such a waiver is against public policy.

Conversion or Exchange Rights

Any debt securities issued under the indenture may be convertible into or exchangeable for shares of our equity securities. The terms and conditions of such conversion or exchange will be set forth in the applicable prospectus supplement. Such terms may include, among others, the following:

- the conversion or exchange price;
- the conversion or exchange period;
- provisions regarding our ability or that of the holder to convert or exchange the debt securities;
- events requiring adjustment to the conversion or exchange price; and
- provisions affecting conversion or exchange in the event of our redemption of such debt securities.

Concerning the Trustee

The indenture provides that there may be more than one trustee with respect to one or more series of debt securities. If there are different trustees for different series of debt securities, each trustee will be a trustee of a trust under a supplemental indenture separate and apart from the trust administered by any other trustee under such indenture. Except as otherwise indicated in this prospectus or any prospectus supplement, any action permitted to be taken by a trustee may be taken by the trustee only with respect to the one or more series of debt securities for which it is the trustee under an indenture. Any trustee under the indenture or a supplemental indenture may resign or be removed with respect to one or more series of debt securities. All payments of principal of, premium, if any, and interest on, and all registration, transfer, exchange, authentication and delivery of (including authentication and delivery on original issuance of the debt securities), the debt securities of a series will be effected by the trustee with respect to such series at an office designated by the trustee.

The indenture contains limitations on the right of the trustee, should it become a creditor of Cytori, to obtain payment of claims in certain cases or to realize on certain property received in respect of any such claim as security or otherwise. If the trustee acquires an interest that conflicts with any duties with respect to the debt securities, the trustee is required to either resign or eliminate such conflicting interest to the extent and in the manner provided by the indenture.

Limitations on Issuance of Bearer Debt Securities

Debt securities in bearer form are subject to special U.S. tax requirements and may not be offered, sold, or delivered within the United States or its possessions or to a U.S. person, except in certain transactions permitted by U.S. tax regulations. Investors should consult the relevant prospectus supplement, in the event that bearer debt securities are issued for special procedures and restrictions that will apply to such an offering.

DESCRIPTION OF WARRANTS

We may issue securities warrants for the purchase of debt securities, preferred stock or common stock. Securities warrants may be issued independently or together with debt securities, preferred stock or common stock and may be attached to or separate from any offered securities. Each series of securities warrants will be issued under a separate warrant agreement to be entered into between us and a securities warrant agent. The securities warrant agent will act solely as our agent in connection with the securities warrants and will not assume any obligation or relationship of agency or trust for or with any registered holders of securities warrants or beneficial owners of securities warrants. This summary of some provisions of the securities warrants is not complete. You should refer to the securities warrant agreement, including the forms of securities warrant certificate representing the securities warrants, relating to the specific securities warrants being offered for the complete terms of the securities warrant agreement and the securities warrants. The securities warrant agreement, together with the terms of securities warrant certificate and securities warrants, will be filed with the SEC in connection with the offering of the specific securities warrants.

The particular terms of any issue of securities warrants will be described in the prospectus supplement relating to the issue. Those terms may include:

- the title of such warrants;
- the aggregate number of such warrants;
- the price or prices at which such warrants will be issued;
- the currency or currencies (including composite currencies) in which the price of such warrants may be payable;
- the terms of the securities purchasable upon exercise of such warrants and the procedures and conditions relating to the exercise of such warrants;
- the price at which the securities purchasable upon exercise of such warrants may be purchased;
- the date on which the right to exercise such warrants will commence and the date on which such right shall expire;
- any provisions for adjustment of the number or amount of securities receivable upon exercise of the warrants or the exercise price of the warrants;
- if applicable, the minimum or maximum amount of such warrants that may be exercised at any one time;
- if applicable, the designation and terms of the securities with which such warrants are issued and the number of such warrants issued with each such security;
- if applicable, the date on and after which such warrants and the related securities will be separately transferable;
- information with respect to book-entry procedures, if any; and
- any other terms of such warrants, including terms, procedures and limitations relating to the exchange or exercise of such warrants.

The prospectus supplement relating to any warrants to purchase equity securities may also include, if applicable, a discussion of certain U.S. federal income tax and ERISA considerations.

Securities warrants for the purchase of preferred stock and common stock will be offered and exercisable for U.S. dollars only. Securities warrants will be issued in registered form only.

[Table of Contents](#)

Each securities warrant will entitle its holder to purchase the principal amount of debt securities or the number of shares of preferred stock or common stock at the exercise price set forth in, or calculable as set forth in, the applicable prospectus supplement.

After the close of business on the expiration date, unexercised securities warrants will become void. We will specify the place or places where, and the manner in which, securities warrants may be exercised in the applicable prospectus supplement.

Upon receipt of payment and the warrant certificate properly completed and duly executed at the corporate trust office of the warrant agent or any other office indicated in the applicable prospectus supplement, we will, as soon as practicable, forward the purchased securities. If less than all of the warrants represented by the warrant certificate are exercised, a new warrant certificate will be issued for the remaining warrants.

Prior to the exercise of any securities warrants to purchase debt securities, preferred stock or common stock, holders of the securities warrants will not have any of the rights of holders of the debt securities, preferred stock or common stock purchasable upon exercise, including (i) in the case of securities warrants for the purchase of debt securities, the right to receive payments of principal of, any premium or interest on the debt securities purchasable upon exercise or to enforce covenants in the applicable indenture, or (ii) in the case of securities warrants for the purchase of preferred stock or common stock, the right to vote or to receive any payments of dividends on the preferred stock or common stock purchasable upon exercise.

Our warrants exercisable for share of our common stock are listed on The NASDAQ Global Market under the symbol "CYTXW."

DESCRIPTION OF UNITS

The following summarizes the terms of common stock warrants and preferred stock warrants we may issue. We urge you to read the detailed provisions of the stock warrant agreement that we will enter into with a stock warrant agent we select at the time of issue.

General

We may issue units comprised of one or more debt securities, shares of common stock, shares of preferred stock and warrants in any combination. Each unit will be issued so that the holder of the unit is also the holder of each security included in the unit. Thus, the holder of a unit will have the rights and obligations of a holder of each included security. The unit agreement under which a unit is issued may provide that the securities included in the unit may not be held or transferred separately, at any time or at any time before a specified date.

We will describe in the applicable prospectus supplement the terms of the series of units, including, but not limited to:

- the designation and terms of the units and of the securities comprising the units, including whether and under what circumstances those securities may be held or transferred separately;
- any provisions of the governing unit agreement that differ from those described below; and
- any provisions for the issuance, payment, settlement, transfer or exchange of the units or of the securities comprising the units.

The provisions described in this section, as well as those described under "Description of Common Stock and Preferred Stock," "Description of Debt Securities" and "Description of Warrants" will apply to each unit and to any common stock, preferred stock, debt security or warrant included in each unit, respectively.

[Table of Contents](#)

Issuance in Series

We may issue units in such amounts and in numerous distinct series as we determine.

Enforceability of Rights by Holders of Units

Each unit agent will act solely as our agent under the applicable unit agreement and will not assume any obligation or relationship of agency or trust with any holder of any unit. A single bank or trust company may act as unit agent for more than one series of units. A unit agent will have no duty or responsibility in case of any default by us under the applicable unit agreement or unit, including any duty or responsibility to initiate any proceedings at law or otherwise, or to make any demand upon us. Any holder of a unit may, without the consent of the related unit agent or the holder of any other unit, enforce by appropriate legal action its rights as holder under any security included in the unit.

We, the unit agents and any of their agents may treat the registered holder of any unit certificate as an absolute owner of the units evidenced by that certificate for any purpose and as the person entitled to exercise the rights attaching to the units so requested, despite any notice to the contrary.

PLAN OF DISTRIBUTION

We may sell the securities being offered hereby in one or more of the following ways from time to time:

- through agents to the public or to investors;
- to underwriters for resale to the public or to investors;
- directly to investors; or
- through a combination of any of these methods of sale.

We will set forth in a prospectus supplement the terms of that particular offering of securities, including:

- the name or names of any agents or underwriters;
- the purchase price of the securities being offered and the proceeds we will receive from the sale;
- any over-allotment options under which underwriters may purchase additional securities from us;
- any agency fees or underwriting discounts and other items constituting agents' or underwriters' compensation;
- any initial public offering price;
- any discounts or concessions allowed or reallocated or paid to dealers; and
- any securities exchanges or markets on which such securities may be listed.

Agents

We may designate agents who agree to use their reasonable efforts to solicit purchases of our securities for the period of their appointment or to sell our securities on a continuing basis.

Underwriters

If we use underwriters for a sale of securities, the underwriters will acquire the securities for their own account. The underwriters may resell the securities in one or more transactions, including negotiated transactions,

[Table of Contents](#)

at a fixed public offering price or at varying prices determined at the time of sale. The obligations of the underwriters to purchase the securities will be subject to the conditions set forth in the applicable underwriting agreement. The underwriters will be obligated to purchase all the securities of the series offered if they purchase any of the securities of that series. We may change from time to time any initial public offering price and any discounts or concessions the underwriters allow or reallow or pay to dealers. We may use underwriters with whom we have a material relationship. We will describe the nature of any such relationship in any prospectus supplement naming any such underwriter. Only underwriters we name in the prospectus supplement are underwriters of the securities offered by the prospectus supplement.

Direct Sales

We may also sell securities directly to one or more purchasers without using underwriters or agents. Underwriters, dealers and agents that participate in the distribution of the securities may be underwriters as defined in the Securities Act, and any discounts or commissions they receive from us and any profit on their resale of the securities may be treated as underwriting discounts and commissions under the Securities Act. We will identify in the applicable prospectus supplement any underwriters, dealers or agents and will describe their compensation. We may have agreements with the underwriters, dealers and agents to indemnify them against specified civil liabilities, including liabilities under the Securities Act. Underwriters, dealers and agents may engage in transactions with or perform services for us in the ordinary course of their businesses.

Trading Markets and Listing of Securities

Unless otherwise specified in the applicable prospectus supplement, each class or series of securities will be a new issue with no established trading market, other than our common stock and warrants, which are listed on the NASDAQ Global Market. We may elect to list any other class or series of securities on any exchange or market, but we are not obligated to do so. It is possible that one or more underwriters may make a market in a class or series of securities, but the underwriters will not be obligated to do so and may discontinue any market making at any time without notice. We cannot give any assurance as to the liquidity of the trading market for any of the securities.

Stabilization Activities

Any underwriter may engage in over-allotment, stabilizing transactions, short covering transactions and penalty bids in accordance with Regulation M under the Exchange Act. Over-allotment involves sales in excess of the offering size, which create a short position. Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum. Short covering transactions involve purchases of the securities in the open market after the distribution is completed to cover short positions. Penalty bids permit the underwriters to reclaim a selling concession from a dealer when the securities originally sold by the dealer are purchased in a covering transaction to cover short positions. Those activities may cause the price of the securities to be higher than it would otherwise be. If commenced, the underwriters may discontinue any of these activities at any time.

Passive Market Making

Any underwriters who are qualified market makers on the NASDAQ Global Market may engage in passive market making transactions in the securities on the NASDAQ Global Market in accordance with Rule 103 of Regulation M, during the business day prior to the pricing of the offering, before the commencement of offers or sales of the securities. Passive market makers must comply with applicable volume and price limitations and must be identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for such security. If all independent bids are lowered below the passive market maker's bid, however, the passive market maker's bid must then be lowered when certain purchase limits are exceeded.

LEGAL MATTERS

The validity of the issuance of the securities offered by this prospectus will be passed upon for us by DLA Piper LLP (US), San Diego, California. If the validity of any securities is also passed upon by counsel for the underwriters of an offering of those securities, that counsel will be named in the prospectus supplement relating to that offering.

EXPERTS

The consolidated financial statements and schedule of Cytori Therapeutics, Inc. as of December 31, 2010 and 2009, and for each of the years in the three-year period ended December 31, 2010, and management's assessment of the effectiveness of internal control over financial reporting as of December 31, 2010, 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.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information electronically with the SEC. You may read and copy these reports, proxy statements and other information at the SEC's public reference room at 100 F Street, N.E., Washington, D.C. 20549 or at the SEC's other public reference facilities. Please call the SEC at 1-800-SEC-0330 for more information about the operation of the public reference room. You can request copies of these documents by writing to the SEC and paying a fee for the copying costs. The SEC also maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC, including us. The SEC's Internet site can be found at <http://www.sec.gov>. In addition, we make available on or through our Internet site copies of these reports as soon as reasonably practicable after we electronically file or furnish them to the SEC. Our Internet site can be found at <http://www.cytoritx.com>.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

We are allowed to incorporate by reference information contained in documents that we file with the SEC. This means that we can disclose important information to you by referring you to those documents and that the information in this prospectus is not complete. You should read the information incorporated by reference for more detail. We incorporate by reference in two ways. First, we list below certain documents that we have already filed with the SEC. The information in these documents is considered part of this prospectus. Second, the information in documents that we file in the future will update and supersede the current information in, and be incorporated by reference in, this prospectus.

We incorporate by reference into this prospectus the documents listed below, any filings we make with the SEC pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of the initial registration statement of which this prospectus is a part and prior to the effectiveness of the registration statement, and any filings we make with the SEC pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act from the date of this prospectus until the termination of this offering (in each case, except for the information furnished under Item 2.02 or Item 7.01 in any current report on Form 8-K and Form 8-K/A):

- our annual report on Form 10-K for the year ended December 31, 2010 filed with the SEC on March 11, 2011 (File No. 001-34375-11682745);
- the information specifically incorporated by reference into our annual report on Form 10-K for the year ended December 31, 2010 from our definitive proxy statement on Schedule 14A filed with the SEC on April 30, 2010 (File No. 001-34375-10787474);

Table of Contents

- the description of our warrants contained in our registration statement on Form 8/A filed with the SEC on June 8, 2009 (File No. 001-34375-09878357);
- 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. 000-32501-1682501); and
- the description of our Series RP Preferred Stock Purchase Rights contained in our registration statement on Form 8-A filed with the SEC on May 30, 2003 (File No. 000-32501-03725608), including any amendments or reports filed for the purpose of updating the description.

We will provide each person, including any beneficial owner, to whom a prospectus is delivered, a copy of any or all of the information that has been incorporated by reference into this prospectus but not delivered with this prospectus upon written or oral request at no cost to the requester. Requests should be directed to: Cytori Therapeutics, Inc., 3020 Callan Road, San Diego, CA 92121, Attn: Investor Relations, telephone: (858) 458-0900.

This prospectus is part of a registration statement that we filed with the SEC. The registration statement contains more information than this prospectus regarding us and our common stock, including certain exhibits and schedules. You can obtain a copy of the registration statement from the SEC at the address listed above or from the SEC's Internet website.

You should rely only on the information provided in and incorporated by reference into this prospectus or any prospectus supplement. We have not authorized anyone else to provide you with different information. You should not assume that the information in this prospectus or any prospectus supplement is accurate as of any date other than the date on the front cover of these documents.

\$40,000,000



Common Stock

Prospectus Supplement

Cowen and Company

May 12, 2014