

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

**FORM S-3
REGISTRATION STATEMENT UNDER
THE SECURITIES ACT OF 1933**

CYTORI THERAPEUTICS, INC.

(Exact name of Registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation or organization)	3841 (Primary Standard Industrial Classification Code Number)	33-0827593 (I.R.S. Employer Identification Number)
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3020 Callan Road
San Diego, California 92121
(858) 458-0900
(Address, including zip code and telephone number, including area code, of Registrant's principal executive offices)

Christopher J. Calhoun
Chief Executive Officer and Director
Cytori Therapeutics, Inc.
3020 Callan Road
San Diego, California 92121
(858) 458-0900

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

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Approximate date of commencement of proposed sale to the public: From time to time or at one time after the effective date of the Registration Statement as the Registrant shall determine.

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

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, as amended (the "Securities Act"), other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.

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

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

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

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

CALCULATION OF REGISTRATION FEE

Title of Securities to be Registered(1)	Proposed Maximum Aggregate Offering Price(1)	Amount of Registration Fee(2)
Common stock, par value \$0.001 per share(3)		
Preferred stock, par value \$0.001 per share		
Depository Shares		
Warrants	\$ 50,000,000	\$ 5,350

- (1) There is being registered hereunder an indeterminate number of shares of common stock, preferred stock, warrants and depository shares that may be issued by the registrant at various times and at indeterminate prices, with a total offering price not to exceed \$50,000,000. Pursuant to Rule 416 under the Securities Act of 1933, as amended, the shares being registered hereunder include such indeterminate number of shares of common stock and preferred stock as may be issuable by the registrant with respect to the shares being registered hereunder as a result of stock splits, stock dividends or similar transactions. Pursuant to Rule 457(i) under the Securities Act, the shares being registered hereunder include such indeterminate number of shares of common stock and preferred stock as may be issuable by the registrant upon conversion or exchange of any preferred stock, depository shares or warrants issued under this registration statement. There is being registered hereunder an indeterminate number of depository shares of the registrant as may be sold from time to time by the registrant. Such depository shares will be evidenced by depository receipts issued pursuant to a deposit agreement. Pursuant to Rule 457(i) under the Securities Act, the depository shares being registered hereunder include such indeterminate number of depository shares as may be issuable by the registrant upon conversion or exchange of any preferred stock, depository shares or warrants issued by the registrant under this registration statement. There is being registered hereunder an indeterminate number of warrants to purchase common stock, preferred stock or depository shares of one or more series. Pursuant to Rule 457(i) under the Securities Act, the warrants being registered hereunder include such indeterminate number of warrants as may be issuable by the registrant upon conversion or exchange of any preferred stock issued by the registrant under this registration statement. In no event will the aggregate offering price of all securities issued by the registrant from time to time pursuant to this registration statement exceed \$50,000,000. The securities registered by the registrant hereunder may be sold separately or with other securities registered hereunder.
- (2) Estimated solely for purposes of calculating the registration fee in accordance with Rule 457(o) under the Securities Act of 1933, as amended.
- (3) This registration statement also relates to rights to purchase one one-thousandth (1/1000th) of a share of Series RP preferred stock, par value \$0.001 per share, which are attached to all shares of the registrant's common stock pursuant to the Rights Agreement, dated as of May 29, 2003, as amended to date. Until the occurrence of events described in the Rights Agreement, the rights are not exercisable, are evidenced by the registrant's common stock certificates and are transferable with and only with the registrant's common stock.

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until the registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

SUBJECT TO COMPLETION, DATED MAY 15, 2006

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

PROSPECTUS

\$50,000,000

Cytori Therapeutics

**Common Stock
Preferred Stock
Depository Shares
Warrants**

We may offer and sell an indeterminate number of shares of our common stock, preferred stock, depository shares and warrants from time to time under this prospectus. We may offer these securities separately or as units, which may include combinations of these securities. We will describe in a prospectus supplement the securities we are offering and selling, as well as the specific terms of the securities. This prospectus may not be used to offer or sell any securities unless accompanied by a prospectus supplement.

We may offer these securities in amounts, at prices and on terms determined at the time of offering. We may sell the securities directly to you, through agents we select, or through underwriters and dealers we select. If we use agents, underwriters or dealers to sell the securities, we will name them and describe their compensation in a prospectus supplement.

Our common stock is quoted on the NASDAQ National Market and the Frankfurt Stock Exchange under the symbols "CYTX" and "XMPA", respectively. On May 12, 2006, the last reported sale price of our common stock on the NASDAQ National Market was \$7.86 per share.

Investing in our securities involves a high degree of risk. See "Risk Factors" beginning on Page 6.

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 _____, 2006

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You should rely only on the information contained or incorporated by reference in this prospectus. We have not authorized anyone to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. We are not making an offer to sell or seeking offers to buy these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information contained or incorporated by reference in this prospectus is accurate as of the date on the front cover of this prospectus only. Our business, financial condition, results of operations and prospects may have changed since that date.

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the United States Securities and Exchange Commission, or SEC, utilizing a "shelf" registration process. Under the shelf registration process, we may offer and sell shares of our common stock, preferred stock, depository shares and/or warrants to purchase our common stock, preferred stock or depository shares with a total value of up to \$50,000,000 from time to time under this prospectus at prices and on terms to be determined by market conditions at the time of offering. This prospectus provides you with a general description of the securities we may offer. Each time we use this prospectus to offer securities, we will provide a prospectus supplement that will contain specific information about the terms of that offering, including a description of the specific amounts, prices and other important terms of the offered securities, including, to the extent applicable:

- designation or classification;
- aggregate offering price;
- conversion, exchange or exercise prices and terms, if applicable, and, if applicable, any provisions for changes to or adjustments in the exercise prices or terms and in the securities or other property receivable upon conversion, exchange or exercise;
- other rights, if any; and
- important federal income tax considerations.

A prospectus supplement may include a discussion of risks or other special considerations applicable to us or the offered securities. A prospectus supplement may also add, update or change information contained in this prospectus. If there is any inconsistency between the information in this prospectus and the applicable prospectus supplement, you must rely on the information in the prospectus supplement. Please carefully read both this prospectus and the applicable prospectus supplement together with additional information described under the heading "Where You Can Find More Information". This prospectus may not be used to offer or sell any securities unless accompanied by a prospectus supplement.

The registration statement containing this prospectus, including exhibits to the registration statement, provides additional information about us and the securities offered under this prospectus. The registration statement can be read at the SEC website or at the SEC's public reading room mentioned under the heading "Where You Can Find More Information".

We may sell the securities directly to or through underwriters, dealers or agents. We, and our underwriters or agents, reserve the right to accept or reject all or part of any proposed purchase of securities. If we do offer securities through underwriters or agents, we will include in the applicable prospectus supplement:

- the names of those underwriters or agents;
- applicable fees, discounts and commissions to be paid to them;
- details regarding options granted to them to purchase additional securities, if any; and
- the net proceeds to us.

Common Stock. We may issue shares of our common stock from time to time. Holders of our common stock are entitled to one vote per share for the election of directors and on all other matters that require shareholder approval. Subject to any preferential rights of any outstanding preferred stock, in the event of our liquidation, dissolution or winding up, holders of our common stock are entitled to share ratably in the assets remaining after payment of liabilities and the liquidation preferences of any outstanding preferred stock. Our common stock does not carry any preemptive rights enabling a holder to

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subscribe for, or receive shares of, any class of our common stock or any other securities convertible into shares of any class of our common stock, or any redemption rights.

Preferred Stock. We may issue shares of our preferred stock from time to time, in one or more series. Under our amended and restated articles of incorporation, our Board of Directors has the authority, without further action by shareholders, to designate up to 5,000,000 shares of preferred stock in one or more series and to fix the rights, preferences, privileges, qualifications and restrictions granted to or imposed upon the preferred stock, including dividend rights, conversion rights, voting rights, rights and terms of redemption, liquidation preference and sinking fund terms, any or all of which may be greater than the rights of the common stock. Our Board of Directors has adopted a stockholder rights plans which is described in greater detail in this prospectus under “Description of Capital Stock—Series RP Preferred Stock Purchase Rights”.

We will fix the rights, preferences, privileges, qualifications and restrictions of the preferred stock of each series that we sell under this prospectus and applicable prospectus supplements in the certificate of determination relating to that series. We will incorporate by reference into the registration statement on Form S-3 of which this prospectus is a part the form of any certificate of determination that describes the terms of the series of preferred stock we are offering before the issuance of the related series of preferred stock. We urge you to read the prospectus supplement related to the series of preferred stock being offered, as well as the complete certificate of determination that contains the terms of the applicable series of preferred stock.

Warrants. We may issue warrants for the purchase of common stock, preferred stock and/or depositary shares in one or more series, from time to time. We may issue warrants independently or together with common stock, preferred stock and/or depositary shares, and the warrants may be attached to or separate from those securities.

The warrants will be evidenced by warrant certificates issued under one or more warrant agreements, which are contracts between us and an agent for the holders of the warrants. In this prospectus, we have summarized certain general features of the warrants. We urge you, however, to read the prospectus supplement related to the series of warrants being offered, as well as the complete warrant agreement and warrant certificate that contain the terms of the warrants. Any warrant agreement and warrant certificate containing the terms of the warrants being offered will be incorporated by reference into the registration statement on Form S-3 of which this prospectus is a part from reports we file with the SEC.

Depositary Shares. We may elect to offer fractional shares of preferred stock rather than full shares of preferred stock and, in that event, will issue receipts for depositary shares. Each of these depositary shares will represent a fraction, which will be set forth in the applicable prospectus supplement, of a share of the applicable series of preferred stock.

Any depositary shares that we sell under this prospectus will be evidenced by depositary receipts issued under a deposit agreement between us and a depositary with whom we deposit the shares of the applicable series of preferred stock that underlie the depositary shares that are sold. We urge you to read the prospectus supplement related to any depositary shares being sold, as well as the complete deposit agreement and depositary receipt. A complete deposit agreement, including a form of depositary receipt, and supplements to those forms containing the terms of any depositary shares that we sell under this prospectus will be incorporated by reference into the registration statement on Form S-3 of which this prospectus is a part from reports we file with the SEC.

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ABOUT CYTORI THERAPEUTICS, INC.

We are a biotechnology company that specializes in the discovery and development of cell-based regenerative medicine therapies. Our goal is to advance adipose stem cell therapies into and through clinical trials and commercialize these therapies through an innovative cell processing system. The therapeutic indications we are focused on currently include cardiovascular disease, gastrointestinal disorders, spine and orthopedic repair, and aesthetic and reconstructive surgery. To facilitate the processing and delivery of adipose stem and regenerative cells, we have designed the proprietary point-of-care Celution™ system to isolate and concentrate a patient’s own regenerative cells in real-time in approximately one hour.

To broaden and accelerate our development efforts, we are seeking co-development partnerships with pharmaceutical, medical device or biotechnology companies. Moreover, we are searching for partners who can help identify drugs, proteins or genes that when combined with adipose stem and regenerative cells enhance or stimulate certain select properties. For example, we may seek to identify a drug that when mixed with adipose stem and regenerative cells directs specific cells to turn more quickly and efficiently into blood vessels.

We also have a business unit that operates under the name MacroPore Biosurgery. This business consists of two product families and we currently derive the majority of our revenue from this unit. The HYDROSORB™ family of bioresorbable spine and orthopedic implants is distributed worldwide exclusively by Medtronic, Inc. (“Medtronic”) who owned 1.0 million shares in Cytori, or 6.5% of our total shares outstanding as of December 31, 2005. Our Thin Film product line will be marketed exclusively in Japan by Senko Medical Trading Co. (“Senko”) following approval of the product in Japan. The potential revenues and profits from the MacroPore Biosurgery division would be used by us to support the research and development of our cell-based therapeutics.

Adipose Stem Cell Technology

Adipose, also known as fat tissue, is considered the richest and most accessible known source of stem and regenerative cells. Peer reviewed research demonstrates that the mechanisms by which adipose stem and regenerative cells act are through the release of growth factors as well as other healing and

repair mechanisms that occur naturally in the body. Additionally, isolated stem cells in adipose tissue have been shown to differentiate into multiple cell types, including muscle, bone, fat, cartilage and nerve. The major advantages of adipose tissue as a source of regenerative cells, which distinguishes it from alternative cell sources, include:

- *Yield:* A meaningful dose of regenerative cells can be isolated in approximately one hour without cell culture (repeated cell replications).
- *Safety:* Patients receive their own cells (autologous-use) so there is no risk of immune rejection or disease transmission.
- *Versatility:* Stem cells from adipose tissue impart benefit through multiple mechanisms-of-action.

The Celution™ System was designed to automate our proprietary process and methods for separating, isolating and concentrating a high yield of stem and regenerative cells from adipose. Our goal is to introduce the first system that can enable real-time cellular therapy at the bedside. In 2005, we completed the development of the engineering and design for the Celution™ Clinical, which is the version of Celution™ System that will be used to conduct clinical trials in Europe and Japan to investigate clinical applications for adipose stem and regenerative cells. We received European regulatory clearance for the Celution™ Clinical through the receipt of a CE Mark in January 2006.

Regenerative Medicine Technology Collaboration

In November 2005, we formed a 50:50 joint venture, Olympus-Cytori, Inc. (the “Joint Venture”), with Olympus Corporation (“Olympus”) to develop and manufacture future generation devices based on our Celution™ System. Olympus, a worldwide leader in the development of innovative medical products, will contribute its expertise in engineering, manufacturing and servicing of sophisticated Celution™ System associated and disposable products, enabling us to increase our focus on the development of therapeutic applications for adipose stem and regenerative cells. Key provisions of the agreement include:

- Olympus paid \$30 million to the Joint Venture for its 50% interest therein;
- We licensed our tissue processing device technology, including the Celution™ System and certain related intellectual property, to the Joint Venture and received an initial \$11 million payment and our 50% interest in the Joint Venture;
- Upon our receipt of a CE Mark for the first generation Celution™ System in January 2006, we became entitled to and subsequently received an additional \$11 million milestone payment from the Joint Venture; and
- The Joint Venture obtained exclusive rights to develop, manufacture and supply the devices for all therapeutic applications solely to Cytori at a formula-based transfer price and Cytori will maintain marketing rights to the devices for all therapeutic applications of adipose stem and regenerative cells.

In a separate agreement entered into in February 2006, we granted Olympus an exclusive right to negotiate a commercialization collaboration for the use of adipose stem and regenerative cells for a specific therapeutic area outside of cardiovascular disease. In exchange for this right, we will receive a \$1.5 million payment from Olympus, which is non-refundable but may be applied towards any definitive commercial collaboration in the future. As part of this Agreement, Olympus will conduct market research and pilot clinical studies in collaboration with us over a 12- to 18-month period for the therapeutic area.

Additionally, we entered into a definitive common stock purchase agreement with Olympus in May 2005. As part of that agreement, Olympus purchased 1.1 million shares, representing 7.2% of our outstanding common stock as of December 31, 2005, and received an option to purchase up to 2.2 million additional shares at \$10.00 per share through December 2006. If Olympus chooses to exercise that option, it would hold up to a 19% ownership interest in our outstanding common stock. Olympus also has a right, which it has not yet exercised, to designate a director to serve on our Board of Directors.

Before we begin to realize appreciable product revenues from our Celution™ System, and ultimately achieve consistent profitability on a quarterly and annual basis, we believe we will first need to successfully conduct controlled, randomized clinical trials in specific therapeutic areas to demonstrate the benefits of using adipose stem and regenerative cells. In 2006, we intend to initiate clinical safety studies for our investigational adipose stem and regenerative cell therapies for treatment of ischemic heart disease in Europe, which may include myocardial infarction and/or congestive heart failure, as well as for applications in reconstructive surgery in Japan. Additionally, we continue to support preclinical research in indications both within and outside these areas.

Beyond our existing arrangements with Olympus, we are seeking additional co-development partnerships with pharmaceutical, medical device or biotechnology companies. Moreover, we are searching for partners who can help identify drugs, proteins or genes that when combined with adipose stem and regenerative cells enhance or stimulate certain select properties. For example, we may seek to identify a drug that when mixed with adipose stem and regenerative cells directs specific cells to turn more quickly and efficiently into blood vessels.

Bioresorbable Technology

Our MacroPore Biosurgery unit develops and manufactures innovative bioresorbable surgical implants. Any cash flows that we may realize from MacroPore Biosurgery would be used to support the development of our adipose stem and regenerative cell therapies.

The unit's product lines include:

- HYDROSORB™ bioresorbable spine and orthopedic surgical implants, which are marketed worldwide by Medtronic and accounted for 100% of our product revenues in 2005; and
- Thin Film bioresorbable surgical implants (includes SurgiWrap™ bioresorbable products), which are used for soft tissue indications.

In 2004, we disposed of our rights to the Thin Film product line other than in Japan. In Japan, the products will be distributed exclusively by Senko following our receipt of a regulatory clearance for them from the Japanese Ministry of Health, Labour and Welfare. We expect regulatory clearance to be received in 2006.

Both bioresorbable product lines are made from a polylactide copolymer composed of lactic acid similar to that which occurs naturally in the human body. The polymer implant maintains its strength during the healing process, while slowly breaking down in the body through hydrolysis. The polymer fragments into single lactic acid molecules and the lactic acid molecules are then metabolized into carbon dioxide and water, and released from the body through the lungs and kidney. By polymerizing lactic acid and taking advantage of thermoplastic properties, we can create bioresorbable products that can be easily shaped, sized and applied to varying anatomical structures.

Other Information

Our business was initially formed as a California general partnership in July 1996. We incorporated in the State of Delaware in May 1997. In July 2005, we changed our name from MacroPore Biosurgery, Inc. to Cytori Therapeutics, Inc. to better reflect our focus and significant progress in the development of regenerative therapeutics. Our offices are located at 3020 Callan Road, San Diego, California 92121, and our telephone number is (858) 458-0900. Additional information about us can be found on our website at www.cytoritx.com and in our periodic and current reports filed with the SEC. Copies of our periodic and current reports are available at the SEC Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549, and online at www.sec.gov and our website, www.cytoritx.com. Other information contained in or that can be accessed through our website is not part of this prospectus or any prospectus supplement. Unless context requires otherwise, as used in this prospectus, the terms “Cytori”, “we”, “us”, and “our” refer to Cytori Therapeutics, Inc., a Delaware corporation.

This prospectus may refer to brand names, trademarks, service marks or trade names of other companies and organizations, and these brand names, trademarks, service marks and trade names are the property of their respective holders.

RISK FACTORS

Investment in our common stock and/or warrants involves a high degree of risk. Before making an investment decision, you should carefully consider the risks and uncertainties described under the heading “Risk Factors” in the applicable prospectus supplement, together with all of the other information appearing in this prospectus or incorporated by reference into this prospectus and any applicable prospectus supplement, in light of your particular investment objectives and financial circumstances before you invest in our securities. If any of these risks actually occurs, our business, financial condition, results of operations and future growth prospects would be materially adversely affected. The trading price of our securities could decline due to any of these risks, and you may lose all or part of your investment. This prospectus, any prospectus supplement and the information incorporated by reference into this prospectus and any prospectus supplement also contain forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of certain factors, including the risks so mentioned.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, any prospectus supplement and the documents incorporated by reference herein include forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934, as amended. All statements that are not purely historical fact are statements that could be deemed forward-looking statements, including without limitation statements regarding our expectations, beliefs, intentions or strategies regarding the future. You can generally identify forward-looking statements as statements containing the words “believe”, “expect”, “may”, “will”, “anticipate”, “intend”, “estimate”, “project”, “plan”, “assume” or other similar expressions, although not all forward-looking statements contain these identifying words. All statements contained or incorporated by reference in this prospectus and any prospectus supplement regarding our future strategy, plans and expectations regarding the commercialization of our products, future operations, projected financial position, estimated future revenues, projected costs, future prospects and results that might be obtained by pursuing management’s current plans and objectives are forward-looking statements.

You should not place undue reliance on our forward-looking statements because the matters they describe are subject to known and unknown risks, uncertainties and other unpredictable factors, many of which are beyond our control. Our forward-looking statements are based on information currently available to us and speak only as of the date on the cover of this prospectus, the date of any prospectus supplement or, in the case of forward-looking statements incorporated by reference, as of the date of the filing that includes the statement. New risks and uncertainties arise from time to time, and it is impossible for us to predict these matters or how they may affect us. Over time, our actual results, performance or achievements will likely differ from the anticipated results, performance or achievements that are expressed or implied by our forward-looking statements, and such difference might be significant and materially adverse to our security holders. Except as required by law, we assume no obligation to update or revise the forward-looking statements in this prospectus after the date of this prospectus or the date of any prospectus supplement, even if subsequent events cause us to become aware of new risks or cause our expectations to change regarding the forward-looking matters discussed in this prospectus. We have identified some of the important factors that could cause future events to differ from our current expectations and they are described in this prospectus and supplements to this prospectus under the heading “Risk Factors”, as well as in our most recent annual report on Form 10-K and any current report on Form 8-K filed subsequent to our most recent annual report on Form 10-K, all of which you should review carefully. Please consider our forward-looking statements in light of those risks and uncertainties as you read this prospectus and any prospectus supplement. You are cautioned not to place undue reliance on such forward-looking statements.

USE OF PROCEEDS

We will retain broad discretion over the use of the net proceeds from the sale of our securities offered hereby. Except as described in any prospectus supplement, we currently anticipate using the net proceeds from the sale of our securities hereby to fund the commercial development of our investigational adipose stem and regenerative cell therapies for cardiovascular disease, gastrointestinal disorders, spine and orthopedic repair, and aesthetic and reconstructive surgery, including related pre-clinical research, clinical trials, other research and development expenses and general administrative expenses. The amounts and timing of the expenditures may vary significantly depending on numerous factors, such as the progress of our research and development efforts, regulatory approval status of our Celution systems, technological advances and the competitive environment for our products. We may also use a portion of the net proceeds to acquire or invest in complementary businesses, products and technologies. Although we have no specific agreements, commitments or understandings with respect to any acquisition, we evaluate acquisition opportunities and engage in related discussions with other companies from time to time.

Pending the use of the net proceeds, we intend to invest the net proceeds in short-term, interest-bearing, investment-grade securities.

DESCRIPTION OF SECURITIES

We may offer shares of our common stock, preferred stock, depositary shares and warrants to purchase our common stock, preferred stock or depositary shares with a total value of up to \$50,000,000 from time to time under this prospectus at prices and on terms to be determined by market conditions at the time of offering. Each time we offer these securities, we will provide a prospectus supplement that will describe the specific amounts, prices and other important terms of the offered securities.

Common Stock

The following description is a summary of the material terms of our common stock, our preferred stock and our rights agreement. Because it is only a summary, it does not contain all of the information that may be important to you. Accordingly, you should read carefully the more detailed provisions of our amended and restated certificate of incorporation, our bylaws, as amended, and our rights agreement, each of which has been filed with the SEC, as well as applicable Delaware law.

As of March 31, 2006, there were 15,564,038 outstanding shares of our common stock, which excludes:

- 6,049,001 shares of our common stock issuable upon the exercise of options granted to our directors, employees and consultants outstanding at March 31, 2006, at a weighted average exercise price of \$4.44 per share;
- 2,511,700 shares of our common stock reserved for future issuance under our equity incentive plans but not yet subjected to options as of March 31, 2006;
- 2,872,834 shares of treasury stock; and
- 2,200,000 shares of our common stock issuable upon the exercise of an option issued in May 2005 to Olympus Corporation, at an exercise price of \$10.00 per share.

Holders of our common stock are entitled to one vote per share on all matters to be voted upon by our stockholders. Subject to the preferences that may be applicable to any future shares of preferred stock outstanding, the holders of common stock are entitled to receive ratably such dividends, if any, as may be declared by our Board of Directors out of funds legally available therefor. In the event of liquidation, dissolution or winding up of us, the holders of common stock are entitled to share ratably in all assets remaining after payment of liabilities, subject to the prior liquidation rights of any future shares of preferred stock outstanding. The holders of common stock have no preemptive, redemption, conversion, sinking fund or other subscription rights. The outstanding shares of common stock are, and the shares offered by us in this offering will be, when issued and paid for, fully paid and nonassessable. The rights, preferences and privileges of holders of common stock are subject to, and may be adversely affected by, the rights of the holders of any preferred stock which we may designate and issue in the future.

Preferred Stock

The following description of preferred stock and the description of the terms of a particular series of preferred stock that will be set forth in the related prospectus supplement are not complete. These descriptions are qualified in their entirety by reference to the certificate of designation relating to that series. The rights, preferences, privileges and restrictions of the preferred stock of each series will be fixed by the certificate of designation relating to that series. The prospectus supplement also will contain a description of certain United States federal income tax consequences relating to the purchase and ownership of the series of preferred stock that is described in the prospectus supplement.

As of March 31, 2006, there were no shares of preferred stock outstanding. The Board of Directors has the authority, without further action by the stockholders, to issue up to 5,000,000 shares of preferred stock in one or more series and to fix the rights, preferences, privileges and restrictions granted to or

imposed upon the preferred stock. Any or all of these rights may be greater than the rights of the common stock.

The Board of Directors, without stockholder approval, can issue preferred stock with voting, conversion or other rights that could negatively affect the voting power and other rights of the holders of common stock. Preferred stock could thus be issued quickly with terms calculated to delay or prevent a change in control of us or make it more difficult to remove our management. Additionally, the issuance of preferred stock may have the effect of decreasing the market price of the common stock.

The prospectus supplement will specify:

- the maximum number of shares;
- the designation of the shares;
- the annual dividend rate, if any, whether the dividend rate is fixed or variable, the date dividends will accrue, the dividend payment dates and whether dividends will be cumulative;
- the price and the terms and conditions for redemption, if any, including redemption at our option or at the option of the holders, including the time period for redemption, and any accumulated dividends or premiums;
- the liquidation preference, if any, and any accumulated dividends upon the liquidation, dissolution or winding up of our affairs;
- any sinking fund or similar provision and, if so, the terms and provisions relating to the purpose and operation of the fund;
- the terms and conditions, if any, for conversion or exchange of shares of any other class or classes of our capital stock or any series of any other class or classes, or of any other series of the same class, or any other securities or assets, including the price or the rate of conversion or exchange and the method, if any, of adjustment;
- the voting rights; and
- any or all other preferences and relative, participating, optional or other special rights, privileges or qualifications, limitations or restrictions.

Preferred stock will be fully paid and nonassessable upon issuance.

Series RP Preferred Stock Purchase Rights

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.

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. The foregoing description of the rights is qualified in its entirety by reference to the Rights Agreement, as amended, and the exhibits thereto.

Anti-Takeover Provisions

Rights Agreement

The rights described above under the heading "Description of Capital Stock—Common Stock—Series RP Preferred Stock Purchase Rights" 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.

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, 4,990,500 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 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 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.

We have entered into indemnification agreements with each of our directors and executive officers to give such directors and officers additional contractual assurances regarding the scope of the indemnification set forth in our certificate of incorporation and to provide additional procedural protections. We also intend to enter into indemnification agreements with any new directors and executive officers in the future.

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

Transfer Agent and Registrar

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

Listing Information

Our common stock is quoted on the Nasdaq National Market and the Frankfurt Stock Exchange under the symbols “CYTX” and “XMPA”, respectively.

Warrants

The following description, together with the additional information we include in any applicable prospectus supplement, is only a summary of the material terms and provisions of the warrants that we may offer under this prospectus, which consist of warrants to purchase common stock, preferred stock and/or depositary shares in one or more series. Warrants may be offered independently or together with common stock, preferred stock and/or depositary shares offered by any prospectus supplement, and may be attached to or separate from those securities. While the terms we have summarized below may generally apply to any future warrants we may offer under this prospectus, we will describe the particular terms of any warrants that we may offer in more detail in the applicable prospectus supplement. The terms of any warrants we offer under a prospectus supplement may differ from the terms we describe below.

We will issue the warrants under a warrant agreement which we will enter into with a warrant agent to be selected by us. We will file forms of the warrant agreements and the related warrant certificates for each type of warrant we may offer under this prospectus with the SEC and such documents shall be incorporated into this registration statement on Form S-3 of which this prospectus is a part. We urge you to read the applicable prospectus supplements related to the warrants that we issue under this prospectus, as well as the complete warrant agreements and related warrant certificates that contain the terms of the warrants.

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We use the term “warrant agreement” to refer to any of these warrant agreements. We use the term “warrant agent” to refer to the warrant agent under any of these warrant agreements. The warrant agent will act solely as an agent of ours in connection with the warrants and will not act as an agent for the holders or beneficial owners of the warrants.

General

We will describe in the applicable prospectus supplement the terms relating to a series of warrants. If warrants for the purchase of common stock, preferred stock or depositary shares are offered, the prospectus supplement will describe the terms of such warrants, including, to the extent applicable:

- the offering price and the aggregate number of warrants offered;
- the total number of shares that can be purchased if a holder of the warrants exercises them and, in the case of warrants for preferred stock or depositary shares, the designation, total number and terms of the series of preferred stock that can be purchased upon exercise or that are underlying the depositary shares that can be purchased upon exercise;
- the designation and terms of any series of preferred stock or depositary shares with which the warrants are being offered and the number of warrants being offered with each share of common stock, preferred stock or depositary share;
- the date on and after which the holder of the warrants can transfer them separately from the related common stock or series of preferred stock or depositary shares;
- the number of shares of common stock or preferred stock or depositary shares that can be purchased if a holder exercises the warrant and the price at which such common stock, preferred stock or depositary shares may be purchased upon exercise, including, if applicable, any provisions for changes to or adjustments in the exercise price and in the securities or other property receivable upon exercise;
- the date on which the right to exercise the warrants begins and the date on which that right expires;
- federal income tax consequences of holding or exercising the warrants; and
- any other specific terms, preferences, rights or limitations of, or restrictions on, the warrants.

Until any warrants to purchase common stock, preferred stock or depositary shares are exercised, holders of the warrants will not have any rights of holders of the underlying common stock, preferred stock or depositary shares, including any rights to receive dividends or to exercise any voting rights, except to the extent set forth under “Warrants—Warrant Adjustments” below.

Exercise of Warrants; Amendments; Supplements to the Warrant Agreements

We will describe in the applicable prospectus supplement the manner in which a holder of warrants may exercise them and the manner in which we may amend or supplement a warrant agreement.

Warrant Adjustments

The applicable prospectus supplement will indicate the circumstances under which the exercise price of, and the number of securities covered by, a common stock warrant, preferred stock warrant or depositary share warrant may be adjusted proportionately if we subdivide or combine our common stock, preferred stock or depositary shares, as applicable.

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Depositary Shares

The following is only a summary of the general terms and provisions of the depositary shares that we may offer. The specific terms of any depositary shares that we may offer will be described in the applicable prospectus supplement.

We may offer fractional shares of preferred stock rather than full shares of preferred stock and, in that event, will issue receipts for depositary shares. Each of these depositary shares will represent a fraction, which will be set forth in the applicable prospectus supplement, of a share of the applicable series of preferred stock. The depositary shares will be evidenced by depositary receipts issued under a deposit agreement. Depositary receipts will be distributed to the holders of the depositary shares that are sold in the applicable offering. We will file the complete deposit agreement, including a form of depositary receipt, with respect to any depositary shares we offer under this prospectus with the SEC and such documents shall be incorporated into this registration statement on Form S-3 of which this prospectus is a part. We urge you to read the applicable prospectus supplements related to the depositary shares that we issue under this prospectus, as well as the complete deposit agreement and the form of depositary receipt that contain the terms of the depositary shares.

Subject to the terms of the deposit agreement, each holder of a depositary share will be entitled, in proportion to the applicable fraction of a share of the preferred stock underlying the depositary share, to all of the rights, preferences and privileges, and be subject to the qualifications and restrictions, of the preferred stock underlying that depositary share.

PLAN OF DISTRIBUTION

We may sell the securities covered by this prospectus from time to time. Registration of the securities covered by this prospectus does not mean, however, that those securities will necessarily be offered or sold.

We may sell the securities separately or together:

- through one or more underwriters or dealers in a public offering and sale by them;
- directly to investors; or
- through agents.

We may sell the securities from time to time:

- in one or more transactions at a fixed price or prices, which may be changed from time to time;
- at market prices prevailing at the times of sale;
- at prices related to such prevailing market prices; or
- at negotiated prices.

We will describe the method of distribution of the securities and the terms of the offering in the applicable prospectus supplement.

Any public offering price and any discounts or concessions allowed or re-allowed or paid to dealers may be changed from time to time.

If underwriters are used in the sale of any securities, the securities will be acquired by the underwriters for their own account and may be resold from time to time in one or more transactions described above. The securities may be either offered to the public through underwriting syndicates represented by managing underwriters or directly by underwriters. Generally, the underwriters' obligations to purchase the securities will be subject to conditions precedent and the underwriters will be obligated to purchase all of the securities if they purchase any of the securities. We may use underwriters with whom we have a material relationship. We will describe in the applicable prospectus supplement, naming the underwriter, the nature of any such relationship.

We may authorize underwriters, dealers or agents to solicit offers by certain purchasers to purchase the securities from us at the public offering price set forth in the prospectus supplement pursuant to delayed delivery contracts providing for payment and delivery on a specified date in the future. The contracts will be subject only to those conditions set forth in the applicable prospectus supplement, and the prospectus supplement will set forth any commissions we pay for solicitation of these contracts.

We may enter into derivative transactions with third parties or sell securities not covered by this prospectus to third parties in privately negotiated transactions. If the applicable prospectus supplement indicates, in connection with those derivatives, the third parties may sell securities covered by this prospectus and the applicable prospectus supplement, including in short sale transactions (short sales of the securities covered by this prospectus may not be made before the effective date of the registration statement on Form S-3 of which this prospectus is a part as a sale is deemed to occur at the time such short sale is made). If so, the third party may use securities pledged by us or borrowed from us or others to settle those sales or to close out any related open borrowings of stock, and may use securities received from us in settlement of those derivatives to close out any related open borrowings of stock. The third party in such sale transactions will be an underwriter and will be identified in the applicable prospectus supplement or in a post-effective amendment.

Underwriters, dealers and agents may be entitled to indemnification by us against certain civil liabilities, including liabilities under the Securities Act, or to contribution with respect to payments made

by the underwriters, dealers or agents, under agreements between us and the underwriters, dealers and agents.

We may grant underwriters who participate in the distribution of securities an option to purchase additional securities to cover overallocments, if any, in connection with the distribution.

Underwriters, dealers or agents may receive compensation in the form of discounts, concessions or commissions from us or our purchasers, as agents in connection with the sale of securities. These underwriters, dealers or agents may be considered to be underwriters under the Securities Act. As a result, discounts, commissions or profits on resale received by the underwriters, dealers or agents may be treated as underwriting discounts and commissions. The prospectus supplement will identify any such underwriter, dealer or agent and describe any compensation received by them from us. Any public offering price and any discounts or concessions allowed or re-allowed or paid to dealers may be changed from time to time.

Unless otherwise specified in the related prospectus supplement, all securities we offer, other than common stock, will be new issues of securities with no established trading market. Any underwriters may make a market in these securities, but will not be obligated to do so and may discontinue any market making at any time without notice. Any common stock sold pursuant to a prospectus supplement will be listed on the Nasdaq National Market or whatever other market or exchange is then our principal U.S. market or exchange. We may apply to list any series of preferred stock, depositary shares or warrants on an exchange, but we are not obligated to do so. Therefore, there may not be liquidity or a trading market for any series of securities.

Any underwriter may engage in overallotment transactions, stabilizing transactions, short-covering transactions and penalty bids in accordance with Regulation M under the Exchange Act. Overallotment 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 the activities at any time. We make no representation or prediction as to the direction or magnitude of any effect that such transactions may have on the price of the securities. For a description of these activities, see the information under the heading "Underwriting" in the applicable prospectus supplement.

Underwriters, broker-dealers or agents who may become involved in the sale of the common stock may engage in transactions with and perform other services for us in the ordinary course of their business for which they receive compensation.

To the extent required, this prospectus may be amended and supplemented from time to time to describe a specific plan of distribution.

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LEGAL MATTERS

The legality of the issuance of the common stock being offered hereby will be passed upon by Heller Ehrman LLP, San Diego, California.

EXPERTS

The consolidated financial statements and financial statement schedule of Cytori Therapeutics, Inc. as of December 31, 2005 and 2004, and for each of the years in the three-year period ended December 31, 2005, have been incorporated by reference herein and in the registration statement in reliance upon the report 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. Our report on the consolidated financial statements refers to the Company deriving a substantial portion of its revenues from a related party.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the informational requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act, and in accordance therewith file annual, quarterly and current reports, proxy statements and other information with the SEC. Our filings are available to the public over the internet at the SEC's website at www.sec.gov and at our website at www.cytoritx.com. You may also read and copy, at prescribed rates, of any document we file at the SEC's Public Reference Room located at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the Public Reference Room.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to incorporate by reference into this prospectus the information contained in other documents we file with the SEC, which means that we can disclose important information to you by referring you to those documents. The information in this prospectus supersedes information incorporated by reference that we have filed with the SEC before the date of this prospectus, while information that we file with the SEC after the date of this prospectus that is incorporated by reference will automatically update and supersede the information in this prospectus. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus. We incorporate by reference the documents listed below and any future filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, until the offering is completed:

- (1) Annual Report on Form 10-K for the fiscal year ended December 31, 2005, as filed on March 30, 2006;
- (2) Quarterly Report on Form 10-Q for the quarter ended March 31, 2006, as filed on May 15, 2006;
- (3) The description of our common stock contained in our registration statement on Form 10/A, as filed on July 16, 2001;
- (4) The description of our Series RP Preferred Stock Purchase Rights contained in our registration statement on Form 8-A, as filed on May 30, 2003, including any amendments or reports filed for the purpose of updating the description; and
- (5) All documents we file with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, after the date of this prospectus and before termination of this offering.

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Upon written or oral request, we will provide without charge to each person to whom a copy of this prospectus is delivered a copy of the documents incorporated by reference herein (other than exhibits to such documents unless such exhibits are specifically incorporated by reference herein). You may request a copy of these filings, at no cost, by writing or telephoning us at the following address: Cytori Therapeutics, Inc., 3020 Callan Road, San Diego, California 92121, Attention: Chief Financial Officer, telephone: (858) 458-0900.

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution.

The following table sets forth various expenses in connection with the sale and distribution of the securities being registered. All of the amounts shown are estimates except for the SEC registration fee.

SEC registration fee	\$ 5,350
Nasdaq National Market listing fees	45,000
Legal fees and expenses	30,000
Accounting fees and expenses	19,500
Miscellaneous	15,150
Total	<u>\$ 115,000</u>

Item 15. Indemnification of Directors and Officers.

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

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

We have entered into indemnification agreements with each of our directors and executive officers to give such directors and officers additional contractual assurances regarding the scope of the indemnification set forth in our Certificate and to provide additional procedural protections. We also intend to enter into indemnification agreements with any new directors and executive officers in the future.

We have obtained directors and officers liability insurance.

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Item 16. Exhibits.

The following documents are filed herewith (unless otherwise indicated) and made a part of this registration statement.

Exhibit Number	Description of Exhibit
1.1*	Form of Underwriting Agreement
3.1(1)	Amended and Restated Certificate of Incorporation
3.2(2)	Amended and Restated Bylaws
4.1(3)	Rights Agreement, dated as of May 29, 2003, between Cytori Therapeutics, Inc. and Computershare Trust Company, Inc., as Rights Agent, which includes: as Exhibit A thereto, the Form of Certificate of Designation, Preferences and Rights of Series RP Preferred Stock of Cytori Therapeutics, Inc.; as Exhibit B thereto, the Form of Right Certificate; and, as Exhibit C thereto, the Summary of Rights to Purchase Series RP Preferred Stock
4.2(4)	Amendment No. 1 to Rights Agreement, dated May 12, 2005, between Cytori Therapeutics, Inc. and Computershare Trust Company, Inc., as Rights Agent
4.3	Form of Common Stock Certificate
4.4*	Form of Warrant Agreement
4.5*	Form of Warrant Certificate
4.6*	Form of Certificate of Designation
4.7*	Form of Preferred Stock Certificate
4.8*	Form of Depository Agreement
4.9*	Form of Depository Receipt
5.1	Opinion of Heller Ehrman LLP
23.1	Consent of Heller Ehrman LLP (filed as part of Exhibit 5.1)
23.2	Consent of Independent Registered Public Accounting Firm
24.1	Power of Attorney (included on signature page)

* If applicable, to be filed by amendment or as an exhibit to a Current Report on Form 8-K and incorporated herein by reference.

(1) Incorporated by reference to the similarly described exhibit included with our Quarterly Report on Form 10-Q, filed on August 13, 2002.

- (2) Incorporated by reference to the similarly described exhibit included with our Quarterly Report on Form 10-Q, filed on August 14, 2003.
- (3) Incorporated by reference to the similarly described exhibit included with our Registration Statement on Form 8-A, filed on May 30, 2003.
- (4) Incorporated by reference to the similarly described exhibit included with our Current Report on Form 8-K, filed on May 18, 2005.

Item 17. Undertakings.

A. The undersigned registrant hereby undertakes:

- (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
 - (i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;
 - (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually

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

- (iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement; *provided, however*, that paragraphs (i), (ii) and (iii) above do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

- (2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be an initial bona fide offering thereof.

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

- (5) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:

- (A) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

- (B) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5) or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. *Provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale before such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately before such effective date.

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- (6) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities:

The undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

- (i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;
- (ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
- (iii) The portion of any other free writing prospectuses relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and
- (iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

B. The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be

deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

C. Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act of 1933 and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by a controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act of 1933 and will be governed by the final adjudication of such issue.

* * *

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SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the city of San Diego, State of California, on May 15, 2006.

CYTORI THERAPEUTICS, INC.

By: /s/ CHRISTOPHER J. CALHOUN

Christopher J. Calhoun
Chief Executive Officer

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POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Christopher J. Calhoun and Mark E. Saad, and each of them individually, his true and lawful attorney-in-fact and agent, each with the full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement, and any registration statement filed pursuant to Rule 462(b) under the Securities Act of 1933, in connection with the registration under the Securities Act of 1933 of securities of the registrant, and to file or cause to be filed the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them individually, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the foregoing, as fully to all intents and purposes as he might or could do in person, lawfully do or cause to be done by virtue thereof, and hereby ratifying and confirming all that each of said attorneys-in-fact, or his substitute or substitutes, may do or cause to be done by virtue hereof. This Power of Attorney may be executed in counterparts.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons on behalf of the Registrant in the capacities indicated on May 15, 2006:

<u>Signature</u>	<u>Name and Title</u>
<u>/s/ MARSHALL G. COX</u>	Marshall G. Cox Chairman of the Board
<u>/s/ CHRISTOPHER J. CALHOUN</u>	Christopher J. Calhoun Chief Executive Officer and Director (principal executive officer)
<u>/s/ MARC H. HEDRICK, M.D.</u>	Marc H. Hedrick, M.D. President and Director
<u>/s/ MARK E. SAAD</u>	Mark E. Saad Chief Financial Officer (principal financial officer)
<u>/s/ CHARLES E. GALETTO</u>	Charles E. Galetto Senior Vice President of Finance (principal accounting officer)
<u>/s/ PAUL W. HAWRAN</u>	Paul W. Hawran Director
<u>/s/ RONALD D. HENRIKSEN</u>	Ronald D. Henriksen Director

EXHIBIT INDEX

Exhibit Number	Description of Exhibit
1.1*	Form of Underwriting Agreement
3.1(1)	Amended and Restated Certificate of Incorporation
3.2(2)	Amended and Restated Bylaws
4.1(3)	Rights Agreement, dated as of May 29, 2003, between Cytori Therapeutics, Inc. and Computershare Trust Company, Inc., as Rights Agent, which includes: as Exhibit A thereto, the Form of Certificate of Designation, Preferences and Rights of Series RP Preferred Stock of Cytori Therapeutics, Inc.; as Exhibit B thereto, the Form of Right Certificate; and, as Exhibit C thereto, the Summary of Rights to Purchase Series RP Preferred Stock
4.2(4)	Amendment No. 1 to Rights Agreement, dated May 12, 2005, between Cytori Therapeutics, Inc. and Computershare Trust Company, Inc., as Rights Agent
4.3	Form of Common Stock Certificate
4.4*	Form of Warrant Agreement
4.5*	Form of Warrant Certificate
4.6*	Form of Certificate of Designation
4.7*	Form of Preferred Stock Certificate
4.8*	Form of Depository Agreement
4.9*	Form of Depository Receipt
5.1	Opinion of Heller Ehrman LLP
23.1	Consent of Heller Ehrman LLP (filed as part of Exhibit 5.1)
23.2	Consent of Independent Registered Public Accounting Firm
24.1	Power of Attorney (included on signature page)

* If applicable, to be filed by amendment or as an exhibit to a Current Report on Form 8-K and incorporated herein by reference.

- (1) Incorporated by reference to the similarly described exhibit included with our Quarterly Report on Form 10-Q, filed on August 13, 2002.
- (2) Incorporated by reference to the similarly described exhibit included with our Quarterly Report on Form 10-Q, filed on August 14, 2003.
- (3) Incorporated by reference to the similarly described exhibit included with our Registration Statement on Form 8-A, filed on May 30, 2003.
- (4) Incorporated by reference to the similarly described exhibit included with our Current Report on Form 8-K, filed on May 18, 2005.

Cytori Therapeutics

Certificate Number
WWW 0000600

Shares
600620***
600620**
****600620*****
*****600620***
*****600620**

INCORPORATED UNDER THE LAWS OF DELAWARE

THIS CERTIFIES THAT

CUSIP 23283K 10 5

SEE REVERSE FOR CERTAIN DEFINITIONS

is the owner of

**MR. SAMPLE & MRS. SAMPLE &
MR. SAMPLE & MRS. SAMPLE**
*** * * SIX HUNDRED THOUSAND
SIX HUNDRED AND TWENTY* * ***

FULLY-PAID AND NON-ASSESSABLE SHARES OF THE COMMON STOCK OF

Cytori Therapeutics, Inc. (hereinafter called the "Company"), transferable on the books of the Company in person or by duly authorized attorney, upon surrender of this Certificate, properly endorsed. This Certificate and the shares represented hereby, are issued and shall be held subject to all of the provisions of the Articles of Incorporation, as amended, and the By-Laws, as amended, of the Company (copies of which are on file with the Company and with the Transfer Agent), to all of which each holder, by acceptance hereof assents. This Certificate is not valid unless countersigned and registered by the Transfer Agent and Registrar.

Witness the facsimile seal of the Company and the facsimile signatures of its duly authorized officers.

/s/ MARK H. HEDRICK

President

DATED <<Month Day, Year>>

COUNTERSIGNED AND REGISTERED:
COMPUTERSHARE INVESTOR SERVICES, LLC.
(CHICAGO)
TRANSFER AGENT AND REGISTRAR,



/s/ [ILLEGIBLE]

Secretary

By _____ AUTHORIZED SIGNATURE

SECURITY INSTRUCTIONS ON REVERSE

CYTORI THERAPEUTICS

THIS CERTIFICATE EVIDENCES AND ENTITLES THE HOLDER HEREOF TO CERTAIN RIGHTS AS SET FORTH IN A RIGHTS AGREEMENT BETWEEN CYTORI THERAPEUTICS, INC. AND COMPUTERSHARE TRUST COMPANY, INC., A COLORADO CORPORATION, AS RIGHTS AGENT, DATED AS OF MAY 29, 2003 (THE "RIGHTS AGREEMENT"), THE TERMS OF WHICH ARE HEREBY INCORPORATED HEREIN BY REFERENCE AND A COPY OF WHICH IS ON FILE AT THE PRINCIPAL EXECUTIVE OFFICES OF CYTORI THERAPEUTICS, INC. UNDER CERTAIN CIRCUMSTANCES, AS SET FORTH IN THE RIGHTS AGREEMENT, SUCH RIGHTS WILL BE EVIDENCED BY SEPARATE CERTIFICATES AND WILL NO LONGER BE EVIDENCED BY THIS CERTIFICATE. CYTORI THERAPEUTICS, INC. WILL MAIL TO THE HOLDER OF THIS CERTIFICATE A COPY OF THE RIGHTS AGREEMENT WITHOUT CHARGE AFTER RECEIPT OF A WRITTEN REQUEST THEREFOR. UNDER CERTAIN CIRCUMSTANCES SET FORTH IN THE RIGHTS AGREEMENT, RIGHTS ISSUED TO, OR HELD BY, ANY PERSON WHO IS, WAS OR BECOMES AN ACQUIRING PERSON OR AN AFFILIATE OR ASSOCIATE THEREOF (AS DEFINED IN THE RIGHTS AGREEMENT), AND CERTAIN RELATED PERSONS, WHETHER CURRENTLY HELD BY OR ON BEHALF OF SUCH PERSON OR BY ANY SUBSEQUENT HOLDER, MAY BECOME NULL AND VOID.

The following abbreviations, when used in the inscription on the face of this certificate, shall be construed as though they were written out in full according to applicable laws or regulations:			
TEN COM	- as tenants in common	UNIF GIFT MIN ACT-Custodian (Cust) (Minor)
TEN ENT	- as tenants by the entireties		under Uniform Gifts to Minors Act (State)
JTTEN	- as joint tenants with right of survivorship and not as tenants in common	UNIF TRF MIN ACTCustodian (until age. . .) (Cust) (Minor)
			under Uniform Transfers to Minors Act. (State)
Additional abbreviations may also be used though not in the above list.			

For value received, _____ hereby sell, assign and transfer unto

PLEASE INSERT SOCIAL SECURITY OR OTHER IDENTIFYING NUMBER OF ASSIGNEE

(PLEASE PRINT OR TYPEWRITE NAME AND ADDRESS, INCLUDING POSTAL ZIP CODE, OF ASSIGNEE)

of the capital stock represented by the within Certificate, and do hereby irrevocably constitute and appoint _____ Shares

to transfer the said stock on the books of the within-named Corporation with full power of substitution in the premises. _____ Attorney

Dated: _____ 20 _____

Signature: _____

Signature: _____

Notice: The signature to this assignment must correspond with the name

Signature(s) Guaranteed: Medallion Guarantee Stamp
THE SIGNATURE(S) SHOULD BE GUARANTEED BY AN ELIGIBLE GUARANTOR INSTITUTION (Banks, Stockbrokers, Savings and Loan Associations and Credit Unions) WITH MEMBERSHIP IN AN APPROVED SIGNATURE GUARANTEE MEDALLION PROGRAM, PURSUANT TO S.E.C. RULE 17Ad-15.

as written upon the face of the certificate, in every particular,
without alteration or enlargement, or any change whatever.



May 15, 2006

Main +1.858.450.8400

Fax +1.858.450.8499

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

**RE: Cytori Therapeutics, Inc.—Registration Statement on Form S-3
\$50,000,000 Aggregate Principal Amount of Securities**

Ladies and Gentlemen:

We have acted as counsel to Cytori Therapeutics, Inc., a Delaware corporation (the “Company”), in connection with the filing by the Company with the Securities and Exchange Commission (the “Commission”) of a Registration Statement on Form S-3 (the “Registration Statement”), under the Securities Act of 1933, as amended (the “Securities Act”), relating to the proposed offer and sale from time to time pursuant to Rule 415 under the Securities Act of \$50,000,000 aggregate principal amount of: (i) shares of the Company’s preferred stock (the “Preferred Stock”), which may or may not be issued in the form of depositary shares evidenced by depositary receipts (the “Depositary Shares”); (ii) shares of the Company’s common stock (the “Common Stock”); (iii) warrants or similar call rights to purchase Preferred Stock, Depositary Shares and/or Common Stock (the “Warrants”); and (iv) shares of Common Stock issued in the form of Depositary Shares or issuable upon exercise or conversion of Preferred Stock, Depositary Shares or Warrants. The Preferred Stock, Depositary Shares, Common Stock and Warrants are hereinafter referred to as the “Securities.”

I.

We have reviewed the Company’s organizational documents and the Registration Statement. For purposes of rendering this opinion, we have examined the originals or copies identified to our satisfaction as being true and complete copies of such corporate records, certificates of officers of the Company and public officials and such other documents, and have made such other factual and legal investigations as we have deemed relevant, necessary or appropriate. In such examination, we have assumed the genuineness of all signatures, the conformity to original documents of all documents submitted to us as conformed copies or .pdf files or photocopies and the authenticity of the originals of such copies. With respect to agreements and instruments executed by natural persons, we have assumed the legal competency and authority of such persons. As to facts material to the opinion expressed herein, we have relied upon oral or written statements and representations of the Company and others.

In rendering this opinion, we have assumed: (i) the Company will have taken all necessary corporate action to approve the issuance and terms of the Securities and the Company will have received the consideration contemplated by such corporate action; (ii) at the time of any offering of Common Stock, Preferred Stock, Depositary Shares or Warrants, that the Company will have such number of shares of Common Stock or Preferred Stock, as applicable, as set forth in such offering or sale, authorized and available for issuance; (iii) all Securities issuable upon conversion, exchange, settlement or exercise of any

Heller Ehrman LLP 4350 La Jolla Village Drive, 7th Floor San Diego, CA 92122-1246 www.hellerehrman.com

Anchorage	Beijing	Hong Kong	Los Angeles	Madison, WI	New York
San Diego	San Francisco	Seattle	Silicon Valley	Singapore	Washington, D.C.

Securities being offered will have been duly authorized, created and, if appropriate, reserved for issuance upon such conversion, exchange, settlement or exercise; (iv) definitive agreements with respect to the Securities, as described in the Registration Statement and the applicable prospectus supplement(s) and as filed as an exhibit to or incorporated by reference in the Registration Statement, will have been duly authorized, executed and delivered by the parties thereto; (v) as appropriate, the Securities will have been duly executed and authenticated in accordance with the applicable agreement(s); and (vi) that the charter documents of the Company have not been amended after today as to the assessability of securities.

II.

This opinion is limited to the federal laws of the United States of America, the laws of the State of California and the General Corporation Law of the State of Delaware, all related provisions of the Delaware Constitution and all reported judicial decisions interpreting the General Corporation Law of the State of Delaware and/or the Delaware Constitution, and we disclaim any opinion as to the laws of any other jurisdiction. We expressly assume that any Securities which are contracts will be governed by and construed in accordance with California law; this assumption may, in fact, not be correct. We express no opinion as to the applicable choice of laws rules that may affect the interpretation or enforcement of the Securities. We further disclaim any opinion as to any statute, rule, regulation, ordinance, order or other promulgation of any regional or local governmental body or as to any related judicial or administrative opinion.

III.

Based upon the foregoing and our examination of such questions of law as we have deemed necessary and appropriate for the purpose of our opinion, and subject to the limitations and qualifications expressed herein, it is our opinion that:

1. With respect to any particular series of shares of Preferred Stock, when both: (a) the Board has taken all necessary corporate action to approve the issuance and terms of the shares of Preferred Stock, the terms of the offering thereof, and related matters, including the adoption of a certificate of designation relating to such Preferred Stock conforming to the Delaware General Corporation Law (a “Certificate”) and the filing of the Certificate with the Secretary of State of the State of Delaware; and (b) certificates representing the shares of Preferred Stock have been duly executed, countersigned, registered and delivered either (i) in accordance with the applicable definitive purchase, underwriting or similar agreement approved by the Board, or upon the exercise of Warrants to purchase Preferred Stock, upon payment of the consideration therefor (not less than the par value of the Preferred Stock) provided for therein or (ii) upon conversion or exercise of such Security or the instrument governing such Security providing for such conversion or exercise as approved by the Board, for the consideration approved by the Board (not less than the par value of the Preferred Stock), then the shares of Preferred Stock will be validly issued, fully paid and nonassessable;

2. With respect to shares of Common Stock, when both: (a) the Board has taken all necessary corporate action to approve the issuance of and the terms of the offering of the shares of Common Stock and related matters; and (b) certificates representing the shares of Common Stock have been duly executed,

countersigned, registered and delivered either (i) in accordance with the applicable definitive purchase, underwriting or similar agreement approved by the Board, or upon the exercise of Warrants to purchase Common Stock, upon payment of the consideration therefor (not less than the par value of the Common Stock) provided for therein or (ii) upon conversion or exercise of any other Security, in accordance with the terms of such Security or the instrument governing such Security providing for such conversion or exercise as approved by the Board, for the consideration approved by the Board (not less than the par value of the Common Stock), then the shares of Common Stock will be validly issued, fully paid and nonassessable;

3. With respect to Depositary Shares, when: (a) the Board has taken all necessary corporate action to approve the issuance and terms of the Depositary Shares, the terms of the offering thereof, and related matters, including the adoption of a Certificate relating to the Preferred Stock underlying such Depositary Shares and the filing of the Certificate with the Secretary of State of the State of Delaware; (b) the Deposit Agreement (the "Deposit Agreement") or agreements relating to the Depositary Shares and the related Depositary Receipts have been duly authorized and validly executed and delivered by the Company and the depositary appointed by the Company; (c) the shares of Preferred Stock underlying such Depositary Shares have been deposited with a bank or trust company (which meets the requirements for the depositary set forth in the Registration Statement) under the applicable Deposit Agreement; and (d) the Depositary Receipts representing the Depositary Shares have been duly executed, countersigned, registered and delivered in accordance with the appropriate Deposit Agreement and the applicable definitive purchase, underwriting or similar agreement approved by the Board upon payment of the consideration therefor provided for therein, the Depositary Shares will be validly issued; and

4. With respect to the Warrants, when both: (a) the Board has taken all necessary corporate action to approve the issuance of and the terms of the Warrants and related matters; and (b) the Warrants have been duly executed and delivered against payment therefor, pursuant to the applicable definitive purchase, underwriting, warrant or similar agreement duly authorized, executed and delivered by the Company and a warrant agent, and the certificates for the Warrants have been duly executed and delivered by the Company and such warrant agent, then the Warrants will be validly issued, fully paid and nonassessable.

IV.

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement and to the reference to this firm under the heading "Experts" in the prospectus or any supplement thereto constituting a part of the Registration Statement. In giving this consent, we do not thereby admit that we are within the category of persons whose consent is required under Section 7 of the Securities Act, the rules and regulations of the Securities and Exchange Commission promulgated thereunder, or Item 509 of Regulation S-K.

This opinion is rendered as of the date first written above and we disclaim any obligation to advise you of facts, circumstances, events or developments which hereafter may be brought to our attention and which may alter, affect or modify the opinion expressed herein. Our opinion is expressly limited to the matters set forth above and we render no opinion, whether by implication or otherwise, as to any other matters relating to the Company, the Registration Statement or the Securities.

Very truly yours,

/s/ HELLER EHRMAN LLP

Consent of Independent Registered Public Accounting Firm

The Board of Directors
Cytori Therapeutics, Inc.:

We consent to the use of our report dated March 24, 2006, with respect to the consolidated balance sheets of Cytori Therapeutics, Inc. and subsidiaries as of December 31, 2005 and 2004, and the related consolidated statements of operations and comprehensive loss, stockholders' equity (deficit), and cash flows for each of the years in the three-year period ended December 31, 2005, and the related financial statement schedule, incorporated herein by reference and to the reference to our firm under the heading "Experts" in the prospectus. Our report on the consolidated financial statements refers to the Company deriving a substantial portion of its revenues from a related party.

/s/ KPMG LLP

San Diego, California
May 15, 2006
