

U.S. 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)

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)

Copies to:

Jonathan E. Soneff, Esq.
Cytori Therapeutics, Inc.
3020 Callan Road
San Diego, CA 92121
(858) 458-0900

Hayden J. Trubitt, Esq.
Heller Ehrman LLP
4350 La Jolla Village Drive
Seventh Floor
San Diego, CA 92122
(858) 450-8400

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

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

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration number of the earlier effective registration statement for the same offering. Registration No. 333-134129

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 delivery of the prospectus is expected to be made pursuant to Rule 434, please 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)	\$ 500,000	\$ 15.35 (4)
Warrants		

- (1) There is being registered hereunder an indeterminate number of shares of common stock and warrants that may be issued by the registrant at various times and at indeterminate prices, with a total offering price not to exceed \$500,000. 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 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 as may be issuable by the registrant upon exercise of any warrants issued under this registration statement. There is being registered hereunder an indeterminate number of warrants to purchase common stock. 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 \$500,000. 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.
- (4) The Registrant previously registered an aggregate \$50,000,000 of its Common Stock and other equity securities on a Registration Statement on Form S-3 (File No. 333-134129), for which a filing fee of \$5,350 was previously paid.

**THIS REGISTRATION STATEMENT SHALL BECOME EFFECTIVE UPON FILING WITH THE COMMISSION IN
ACCORDANCE WITH RULE 462(b) UNDER THE SECURITIES ACT OF 1933, AS AMENDED.**

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February 23, 2007

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

**RE: Cytori Therapeutics, Inc.
Registration Statement on Form S-3 Filed Pursuant to Rule 462(b)**

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") pursuant to Rule 462(b) under the Securities Act of 1933, as amended (the "Securities Act"), relating to the proposed offer and sale of \$500,000 of Units (the "Offering"), with each Unit comprising one share of the Company's common stock (the "Common Stock") and a Common Stock Warrant (the "Warrants") to purchase one half of one share of Common Stock (such shares underlying the Warrants being referred to as the "Warrant Shares") (The Common Stock, the Warrants and the Warrant Shares collectively being 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 that the Company will receive the consideration for the Units contemplated in the Offering and the consideration for the Warrant Shares as set forth in the Warrants.

II.

This opinion is limited to the federal laws of the United States of America, the laws of the States of California and New York 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 or New York 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 (i) the Warrants, when executed and delivered pursuant to the terms of the Offering, will be validly issued, and (ii) the Common Stock, when issued pursuant to the terms of the Offering, will be validly issued, fully paid and non-assessable, and (iii) the Warrant Shares, when, if and as issued upon the exercise of the Warrants in accordance with the terms thereof, will be validly issued, fully paid and non-assessable.

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,

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
February 23, 2007
