PROSPECTUS SUPPLEMENT
(To Prospectus dated June 5, 2006)

100,000 Shares of Common Stock

$4.87 per share

We are offering to sell to The Regents of The University of California, or The Regents, 100,000 shares of our common stock pursuant to this prospectus in consideration for certain amendments to our patent license agreement with the Regents. We will not receive any cash proceeds from the sale of shares under this prospectus. The last reported sale price on the Nasdaq Global Market of our common stock on September 26, 2006 was $4.87 per share.

This investment involves a high degree of risk. See "Risk Factors" on page S-4 of this prospectus supplement.

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

The date of this prospectus supplement is September 26, 2006.

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You should rely only on the information contained in or incorporated by reference into this prospectus supplement and the accompanying prospectus. We have not authorized any other person 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 these securities in any jurisdiction where the offer or sale is not permitted. The information in this prospectus supplement and the accompanying prospectus is accurate only as of the date it is presented. Our business, financial condition, results of operations and prospects may have changed since these dates.

ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement and the accompanying prospectus dated June 5, 2006 are part of a “shelf” registration statement on Form S-3 we filed on May 15, 2006 with the Securities and Exchange Commission and that was declared effective by the Securities and Exchange Commission on June 5, 2006. By using a “shelf” registration statement, we may sell shares of common stock, preferred stock, warrants, to purchase common stock and/or depositary shares as described in the accompanying prospectus from time to time in one or more offerings up to a total of $50,000,000.

These documents contain important information you should consider when making your investment decision. The accompanying prospectus provides you with a general description of the securities we may offer. This prospectus supplement contains information about the common stock in this offering. This prospectus supplement may add, update or change information in the accompanying prospectus. You should rely only on the information contained in this prospectus supplement, the accompanying prospectus or incorporated by reference into this prospectus supplement and the accompanying prospectus. We have not authorized anyone to provide you with any other information.

This prospectus supplement does not constitute an offer to sell, or a solicitation of an offer to buy, the securities offered hereby in any jurisdiction where, or to any person to whom, it is unlawful to make such offer or solicitation.

The information contained in this prospectus supplement is accurate only as of the date of this prospectus supplement and the accompanying prospectus, regardless of the time of delivery of this prospectus or of any sale of securities.

THE OFFERING

Common stock offered by us pursuant to this prospectus	100,000 shares
Common stock to be outstanding after this offering	15,725,170 shares
Offering participants	This offering is being made solely to The Regents of the University of California (“The Regents”).
Use of proceeds	We will receive no cash proceeds from this offering. The shares to be sold under this prospectus are being offered in consideration for certain amendments embodied in a September 26, 2006 amendment and restatement of our patent license agreement, originally dated October 16, 2001, with The Regents.
Nasdaq Global Market symbol	CYTX
Risk factors	This investment involves a high degree of risk. See “Risk Factors” on page S-4 of this prospectus supplement.

The number of shares of common stock to be outstanding after this offering is based on 15,625,170 shares outstanding as of June 30, 2006 and excludes, among other things:

- 2,918,255 shares of common stock sold by us in August 2006 at a price of $5.75 per share; and
- options outstanding on June 30, 2006 to purchase a total of 6,144,536 shares at a weighted-average exercise price of $4.63 per share.

RISK FACTORS

An investment in our common stock offered through this prospectus supplement and the accompanying prospectus involves certain risks. Before making an investment decision, you should carefully consider the risks set forth below and set forth under the caption "Risk Factors" in our filings with the Securities and Exchange Commission pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, which are incorporated by reference herein.

We will need to raise more cash in the future

As of June 30, 2006, we had $9,343,000 of cash, cash equivalents and short-term investments; we have always had negative cash flows from operations. Our regenerative cell business will continue to result in a substantial requirement for research and development expenses for several years, during which it could bring in no significant revenues. There can be no guarantee that adequate funds for our operations from any additional debt or equity financing, our operating revenues, arrangements with distribution partners or from other sources will be available when needed or on terms attractive to us. The inability to obtain sufficient funds would require us to delay, scale back or eliminate some or all of our research or product development programs, manufacturing operations, clinical studies or regulatory activities or to license third parties to commercialize products or technologies that we would otherwise seek to develop ourselves, thus having a substantial negative effect on the results of our operations and financial condition.

Subsequent to the second quarter of 2006, we raised $16,800,000 by selling 2,918,255 shares of our common stock at $5.75 per share under a shelf registration statement.

We have never been profitable on an operational basis and we will have significant operating losses for at least the next several years

We have incurred net operating losses in each year since we started doing business. These losses have resulted primarily from expenses associated with our research and development activities and general and administrative expenses. Development-stage losses related to our development of regenerative cell technology are expected to keep us in a loss position on a consolidated basis for several years. We anticipate that our recurring operating expenses will be at high levels for the next several years, due to the continued need to fund our clinical research program as well as additional preclinical research. We expect to continue to incur operational losses in our spine and orthopedics business at least through the end of 2006, and the amount of future net losses and time necessary to reach operational profitability in that business are somewhat uncertain.

Our business is high-risk

We are focusing our resources and efforts primarily on our regenerative cell technology and its development-stage cash needs. This is a high-risk strategy because there can be no assurance that our regenerative cell technology will ever be developed into commercially viable products (commercial risk), that we will be able to preclude other companies from depriving us of market share and profit margins by selling products based on our inventions and developments (legal risk), that we will be able to successfully manage a company in a different business than we have operated in the past (operational risk), that we will be able to deliver regenerative cells into the body to achieve the desired therapeutic results (scientific risk), or that our cash resources will be adequate to develop the regenerative cell technology until it becomes profitable, if ever (financial risk). We are using our cash in one of the riskiest industries in the economy (strategic risk). This may make our stock an unsuitable investment for some investors.

The financial risk in this strategy is significant, particularly since our bioresorbable products are not currently independently cash-flow-positive. Although we eliminated the negative cash flow of the early commercialization stage of the (non-Japan) Thin Film business by selling that business to MAST in May 2004, even our core spine and orthopedics implants business fell back into a negative cash flow position in 2004 due to the sharp reduction in orders from and sales to Medtronic. This trend continued in 2005 despite stocking orders for the new MYSTIQUE™ line and since then the orders and sales have again declined sharply.

We must keep our joint venture with Olympus operating smoothly

Our regenerative cell business cannot succeed on the current timelines unless our joint venture collaboration with Olympus goes well. We have given Olympus-Cytori, Inc. an exclusive license to our regenerative cell therapeutic device technology for use in future generation devices. If Olympus-Cytori, Inc. does not successfully develop and manufacture future generation devices for sale to us, we may not be able to commercialize any device or any therapeutic products successfully into the market. In addition, any future disruption in or breakup of our relationship with Olympus would be extremely costly to our reputation, in addition to causing many serious practical problems.

We and Olympus must overcome contractual and cultural barriers as we work together. Our relationship is formally measured by a set of complex contracts, which have not yet been tested in practice. In addition, many aspects of the relationship will be essentially non-contractual and must be worked out between the parties and the responsible individuals over time. The Joint Venture is intended to have a long life, and it is difficult to maintain cooperative relationships over a long period of time from a far distance in the face of various kinds of change. Cultural differences, including a language barrier to some degree, may affect the efficiency of the relationship as well.

Olympus-Cytori, Inc. is 50% owned by us and 50% owned by Olympus. By contract, each side must consent before any of a wide variety of important business actions can occur. This situation possesses a risk of potential time-consuming and difficult negotiations which could at some point delay the Joint Venture from pursuing its business strategies.

Olympus is entitled to designate the Joint Venture’s chief executive officer and a majority of its board of directors, which means that day-to-day decisions which are not subject to a contractual veto will essentially be controlled by Olympus. In addition, Olympus-Cytori, Inc. will need more money than its initial capitalization in order to finalize development of and production of the future generation devices. If we are unable to help provide future financing for Olympus-Cytori, Inc., our relative equity interest in Olympus-Cytori, Inc. may decrease.

Furthermore, under a License/Joint Development Agreement among Olympus-Cytori, Inc., Olympus, and us, Olympus will have a primary role in the development of Olympus-Cytori, Inc.’s future generation devices. Although Olympus has extensive experience in developing medical devices, this arrangement will result in a reduction of our control over the development and manufacturing of the future generation devices.

We rely on Medtronic to distribute a majority of our current biomaterials products, but Medtronic’s level of commitment to our products is doubtful

We have limited control over sales, marketing and distribution of our biomaterials products. Our strategy for sales and marketing of our bioresorbable products included entering into an agreement with Medtronic, a company with a large distribution network, to market many of our current and certain future products incorporating our technology. The sale of hard-tissue-fixation bioresorbable implant products to our distribution partner, Medtronic, has constituted the majority of our revenues.

We remain significantly dependent on Medtronic to generate sales revenues for all of our spine and orthopedics bioresorbable products. The amount and timing of resources which may be devoted to the performance of Medtronic's contractual responsibilities are not within our control. There can be no guarantee that Medtronic will perform its obligations as expected or pay us any additional option or license fees. There is also no guarantee that it will market any new products under the distribution agreements or that we will derive any significant revenue from such arrangements. Medtronic's sale of our products to end customers in 2004 and 2005 and the first half of 2006, and its rate of product orders placed with us in the same periods, disappointed our expectations with the exception of 2005 stocking orders for the new MYSTIQUE™ line. 2004 and 2005 results and the first half of 2006 were exceptionally weak, and we are significantly disappointed with the marketing efforts of Medtronic for our non-MYSTIQUE™ products at this time. We recorded an inventory provision for slow-moving non-MYSTIQUE™ inventory in the second, third and fourth quarters of 2005.

Our dependence upon Medtronic to market and sell our bioresorbable products places us in a position where we cannot accurately predict the extent to which our products will be actively and effectively marketed, depriving us of some of the reliable data we need to make optimal operational and strategic decisions. The consequent lack of visibility is evidenced by the withdrawal of our announced financial guidance for 2004, and our results falling within the lowest range of our guidance for 2005. The results of this business line so far in 2006 have been below our internal expectations. Although the business is not succeeding as we had hoped, we performed an analysis and determined that none of the related assets are impaired.

The prices which Medtronic pays us are fixed (pending biannual price reviews in January and July of each year), based on a percentage of Medtronic's historic selling price to its customers. If our costs increase but our selling prices remain fixed, our profit margin will suffer.

Medtronic owns 6.4% of our stock, which may limit our ability to negotiate commercial arrangements optimally with Medtronic. Although Medtronic has exclusive distribution rights to our co-developed spinal implants, it also distributes other products that are competitive to ours. Medtronic might choose to develop and distribute existing or alternative technologies in preference to our technology in the spine, or preferentially market competitive products that can achieve higher profit margins. We suspect that this has in fact been happening.

There can be no assurance that our interests will coincide with those of Medtronic or that disagreement over rights or technology or other proprietary interests will not occur. The loss of the marketing services provided by Medtronic (or the failure of Medtronic to satisfactorily perform these marketing services), or the loss of revenues generated by Medtronic, could have a substantial negative effect on our ability or willingness to continue our spine and orthopedics biomaterials business. Indeed, even with Medtronic in place it seems the problems we have experienced may be intractable, and we are considering the possibility that the business cannot succeed under our stewardship. Accordingly, we are considering the possibility of divestment or other strategic alternatives for the business.

Senko has not yet begun to distribute our Thin Film products in Japan; but if and when they do, we cannot be assured that they will be successful.

We have a limited operating history; our operating results can be volatile

Our prospects must be evaluated in light of the risks and difficulties frequently encountered by emerging companies and particularly by such companies in rapidly evolving and technologically advanced fields such as the biotechnology and medical device fields. Due to our limited operating history, and the development stage status of our regenerative cell business, comparisons of our year-to-year operating results are not necessarily meaningful and the results for any periods should not necessarily be relied upon as an indication for future performance. Since our limited operating history makes the prediction of future results difficult or impossible, our recent revenue results should not be taken as an indication of any future growth or of a sustainable level of revenue. Operating results will also be affected by our transition away from our revenue generating medical device business and the focus of the vast majority of our resources into the development-stage regenerative cell business.

Moreover, our operating results can vary substantially from our previously published financial guidance (such as occurred in the second quarter of 2004), from analyst expectations and from previous periodic results for many reasons, including the timing of product introductions and distributor purchase orders. Also, the 2002 sale of our CMF bone fixation implant and accessory product line, which had represented a large portion of our revenues, plus the 2004 sale of our (non-Japan) Thin Film surgical implants for separation of soft tissues, have distorted and will distort quarterly and annual earning comparisons through 2004, 2005 and 2006. Earnings surprises can have a disproportionate effect on the stock prices of emerging companies such as ours. Also, our stock price is likely to be disproportionately affected by changes which generally affect the economy, the stock market or the medical device and biotechnology industries.

From time to time, we have tried to influence our investors' expectations as to our operating results by periodically announcing financial guidance. However, we have in the past been forced to revise or withdraw such guidance due to lack of visibility and predictability of product demand. This lack of visibility and predictability of product demand for our bioresorbable implant products is likely to occur in the future as well.

We are vulnerable to competition and technological change, and also to physicians' inertia

We compete with many domestic and foreign companies in developing our technology and products, including biotechnical, medical device, pharmaceutical and biopharmaceutical companies. Many of our competitors and potential competitors have substantially greater financial, technological, research and development, marketing and personnel resources than we do. There can be no assurance that our competitors will not succeed in developing alternative technologies and products that are more effective, easier to use or more economical than those which we have developed or are in the process of developing or that would render our technology and products obsolete and non-competitive in these fields. In general, we may not be able to preclude other companies from developing and marketing competitive regenerative cell therapies or bioresorbable products that are similar to ours or perform similar functions.

These competitors may also have greater experience in developing therapeutic treatments, conducting clinical trials, obtaining regulatory clearances or approvals, manufacturing and commercializing therapeutic or biomaterials products. It is possible that certain of these competitors may obtain patent protection, approval or clearance by the U.S. Food and Drug Administration "FDA" or achieve commercialization earlier than we, any of which could have a substantial negative effect on our business. Finally, Olympus, Medtronic and our other partners might pursue parallel development of other technologies or products, which may result in a partner developing additional products that will compete with our products.

We also compete with other types of regenerative cell therapies such as bone marrow derived cell therapies, and potentially embryonic derived therapies. Our biomaterials business competes with manufacturers of traditional non-bioresorbable implants, such as titanium implants. Doctors have historically been slow to adopt new technologies such as ours, whatever the merits, when older technologies continue to be supported by established providers. Overcoming such inertia often requires very significant marketing expenditures or definitive product superiority.

We expect physicians' inertia and skepticism to also be a significant barrier as we attempt to gain market penetration with our future regenerative cell products. We believe we will need to finance lengthy time-consuming clinical studies (so as to provide convincing evidence of the medical benefit) in order to overcome this inertia and skepticism.

Our regenerative cell technology products are pre-commercialization, which subjects us to development and marketing risks

We are in a relatively early stage of the path to commercialization with many of our products. We believe that our long-term viability and growth will depend in large part on our ability to develop commercial quality cell processing devices and to establish the safety and efficacy of our therapies through clinical trials and studies. We are presently pursuing regenerative cell opportunities in cardiovascular disease, spine and orthopedic conditions, gastrointestinal disorders and new approaches for aesthetic and reconstructive surgery that may require extensive additional capital investment, research, development, clinical testing and regulatory clearances or approvals prior to commercialization. There can be no assurance that our development programs will be successfully completed or that required regulatory clearances or approvals will be obtained on a timely basis, if at all.

The path to commercial profit from our regenerative cell technology is unclear even if we demonstrate the medical benefit of our regenerative cell technology in various applications. There is no proven path for commercializing the technology in a way to earn a durable profit commensurate with the medical benefit. Most of our cell-related products and/or services are at least three to five years away.

Moreover, the successful development and market acceptance of our technologies and products are subject to inherent developmental risks, including ineffectiveness or lack of safety, unreliability, failure to receive necessary regulatory clearances or approvals, high commercial cost and preclusion or obsolescence resulting from third parties' proprietary rights or superior or equivalent products, as well as general economic conditions affecting purchasing patterns. There can be no assurance that we or our partners will be able to successfully develop and commercialize our technologies or products, or that our competitors will not develop competing technologies that are less expensive or otherwise superior to ours. The failure to successfully develop and market our new regenerative cell technologies would have a substantial negative effect on the results of our operations and financial condition.

We have limited manufacturing experience

We have no experience in manufacturing the Celution™ system at a commercial level, and although Olympus is a highly capable and experienced manufacturer of medical devices, there can be no guarantee that the Olympus-Cytori joint venture will be able to successfully develop and manufacture the Celution™ system in a manner that is cost-effective or commercially viable, or that development and manufacturing capabilities might not take much longer than currently anticipated to be ready for the market.

In the event that the Olympus-Cytori joint venture is not successful, Cytori may not have the required level of technical ability or other resources to self manufacture commercially viable devices, and in any event this failure would substantially extend the time it would take for us to bring a commercial device to market. This makes us significantly dependant on the continued dedication and skill of Olympus for the successful development of the Celution™ system.

In addition, the future of our biomaterials business success is significantly dependent on our ability to manufacture our bioresorbable implants in commercial quantities, in compliance with regulatory requirements and in a cost-effective manner. Production of some of our products in commercial-scale quantities may involve unforeseen technical challenges and may require significant scale-up expenses for additions to facilities and personnel. There can be no guarantee that we will be able to achieve large-scale manufacturing capabilities for some of our biomaterials products or that we will be able to manufacture these products in a cost-effective manner or in quantities necessary to allow us to achieve profitability. Our 2002 sale of CMF production assets to Medtronic and our 2004 sale of the (non-Japan) Thin Film product line deprived us of some economies of scale in manufacturing. Current demand for spine and orthopedics products from Medtronic is so low that economies of scale are lacking in regard to that product line as well.

If we are unable to sufficiently meet Medtronic's requirements for certain products as set forth under its agreement, Medtronic itself may then manufacture and sell such product and only pay us royalties on the sales. The resulting loss of payments from Medtronic for the purchase of these products may have a substantial negative effect on the results of our operations and financial condition.

We have to maintain quality assurance certification and manufacturing approvals

The manufacture of our bioresorbable products is, and the manufacture of the Celution™ system for regenerative cells will be, subject to periodic inspection by regulatory authorities and distribution partners. The manufacture of devices and products for human use is subject to regulation and inspection from time to time by the FDA for compliance with the FDA's Quality System Regulation "QSR" requirements, as well as equivalent requirements and inspections by state and non-U.S. regulatory authorities. There can be no guarantee that the FDA or other authorities will not, during the course of an inspection of existing or new facilities, identify what they consider to be deficiencies in our compliance with QSRs or other requirements and request, or seek, remedial action.

Failure to comply with such regulations or a potential delay in attaining compliance may adversely affect our manufacturing activities and could result in, among other things, injunctions, civil penalties, FDA refusal to grant pre-market approvals or clearances of future or pending product submissions, fines, recalls or seizures of products, total or partial suspensions of production and criminal prosecution. There can be no assurance that we will be able to obtain additional necessary regulatory approvals or clearances on a timely basis, if at all. Delays in receipt of or failure to receive such approvals or clearances or the loss of previously received approvals or clearances could have a substantial negative effect on the results of our operations and financial condition.

We depend on a sole source supplier for our crucial raw material for our bioresorbable products

We currently purchase the high molecular weight, medical grade, lactic acid copolymer used in manufacturing most of our bioresorbable products, from a single qualified source. Although we have a contract with B.I. Chemicals, Inc., which guarantees continuation of supply through August 15, 2007, we cannot guarantee that they will elect to continue the contract beyond that date, or that they will not elect to discontinue the manufacture of the material. They have agreed that if they discontinue manufacturing they will either find a replacement supplier, or provide us with the necessary technology to self-manufacture the material, either of which could mean a substantial increase in material costs. Also, despite this agreement they might fail to do these things for us. Under the terms of the contract, B.I. Chemicals, Inc. may choose to raise their prices upon six months' prior notice which may also result in a substantially increased material cost. Although we believe that we would be able to obtain the material from at least one other source in the event of a failure of supply, there can be no assurance that we will be able to obtain adequate increased commercial quantities of the necessary high quality within a reasonable period of time or at commercially reasonable rates. Lack of adequate commercial quantities or the inability to develop alternative sources meeting regulatory requirements at similar prices and terms within a reasonable time or any interruptions in supply in the future could have a significant negative effect on our ability to manufacture products, and, consequently, could have a material adverse effect on the results of our operations and financial condition.

We may not be able to protect our proprietary rights

Our success depends in part on whether we can obtain additional patents, maintain trade secret protection and operate without infringing on the proprietary rights of third parties.

Our regenerative cell technology license agreement with the Regents of the University of California contains certain developmental milestones, which if not achieved could result in the loss of exclusivity or loss of the license rights. The loss of such rights could significantly impact our ability to continue the development of the regenerative cell technology and commercialize related products. Also, our power as licensee to successfully use these rights to exclude competitors from the market is untested. In addition, further legal risk arises from a lawsuit, filed by the University of Pittsburgh naming all of the inventors who had not assigned their ownership interest in Patent 6,777,231 to the University of Pittsburgh, seeking a determination that its assignors, rather than the University of California's assignors, are the true inventors of Patent 6,777,231. We are the exclusive, worldwide licensee of the University of California's rights under this patent, which relates to adult stem cells isolated from adipose tissue that can differentiate into two or more of a variety of cell types. If the University of Pittsburgh wins the lawsuit, our license rights to this patent could be nullified or rendered non-exclusive with respect to any third party that might license rights from the University of Pittsburgh, and our regenerative cell strategy could be impacted.

We have various U.S. patents for the design of our bioresorbable plates and high torque screws and devices and we have filed applications for numerous additional U.S. patents, as well as certain corresponding patent applications outside the United States, relating to our technology. However, we believe we cannot patent the use of our lactic acid copolymer for surgical implants, nor are many of our particular implants generally patentable.

There can be no assurance that any of the pending patent applications will be approved or that we will develop additional proprietary products that are patentable. There is also no assurance that any patents issued to us will provide us with competitive advantages, will not be challenged by any third parties or that the patents of others will not prevent the commercialization of products incorporating our technology. Furthermore, there can be no guarantee that others will not independently develop similar products, duplicate any of our products or design around our patents.

Our commercial success will also depend, in part, on our ability to avoid infringing on patents issued to others. If we were judicially determined to be infringing on any third party patent, we could be required to pay damages, alter our products or processes, obtain licenses or cease certain activities. If we are required in the future to obtain any licenses from third parties for some of our products, there can be no guarantee that we would be able to do so on commercially favorable terms, if at all. U.S. patent applications are not immediately made public, so we might be surprised by the grant to someone else of a patent on a technology we are actively using. As noted above as to U Pitt lawsuit, even patents issued to us or our licensors might be judicially determined to belong in full or in part to third parties.

Litigation, which would result in substantial costs to us and diversion of effort on our part, may be necessary to enforce or confirm the ownership of any patents issued or licensed to us or to determine the scope and validity of third party proprietary rights. If our competitors claim technology also claimed by us and prepare and file patent applications in the United States, we may have to participate in interference proceedings declared by the U.S. Patent and Trademark Office or a foreign patent office to determine priority of invention, which could result in substantial costs to and diversion of effort, even if the eventual outcome is favorable to us.

Any such litigation or interference proceeding, regardless of outcome, could be expensive and time consuming. We have been incurring substantial legal costs as a result of the University of Pittsburgh lawsuit, and our president Marc Hedrick is a named individual defendant in that lawsuit because he is one of the inventors identified on the patent. As a named inventor on the patent, Marc Hedrick is entitled to receive from the Regents of the University of California up to 7% of royalty payments made by us to the Regents of the University of California. This agreement was in place prior to employment with us.

In addition to patents, which alone may not be able to protect the fundamentals of our regenerative cell and bioresorbable businesses, we also rely on unpatented trade secrets and proprietary technological expertise. We rely, in part, on confidentiality agreements with our partners, employees, advisors, vendors and consultants to protect our trade secrets and proprietary technological expertise. There can be no guarantee that these agreements will not be breached, or that we will have adequate remedies for any breach, or that our unpatented trade secrets and proprietary technological expertise will not otherwise become known or be independently discovered by competitors.

Failure to obtain or maintain patent protection, or protect trade secrets, for any reason (or third party claims against our patents, trade secrets or proprietary rights, or our involvement in disputes over our patents, trade secrets or proprietary rights, including involvement in litigation), could have a substantial negative effect on the results of our operations and financial condition.

We may not be able to protect our intellectual property in countries outside the United States

Intellectual property law outside the United States is uncertain and in many countries is currently undergoing review and revisions. The laws of some countries do not protect our patent and other intellectual property rights to the same extent as United States laws. We currently have pending patent applications in Europe, Australia, Japan, Canada, China, Korea, and Singapore, among others.

We are, and Olympus-Cytori, Inc. will be, subject to intensive FDA regulation

As newly developed medical devices, ours as well as Olympus-Cytori's regenerative cell harvesting, isolation and delivery devices and our bioresorbable implants must receive regulatory clearances or approvals from the FDA and, in many instances, from non-U.S. and state governments, prior to their sale. Ours as well as Olympus-Cytori's current and future regenerative cell harvesting, isolation and delivery devices and bioresorbable implants are subject to stringent government regulation in the United States by the FDA under the Federal Food, Drug and Cosmetic Act. The FDA regulates the design/development process, clinical testing, manufacture, safety, labeling, sale, distribution and promotion of medical devices and drugs. Included among these regulations are pre-market clearance and pre-market approval requirements, design control requirements, and the Quality System Regulations / Good Manufacturing Practices. Other statutory and regulatory requirements govern, among other things, establishment registration and inspection, medical device listing, prohibitions against misbranding and adulteration, labeling and post market reporting.

The regulatory process can be lengthy, expensive and uncertain. Before any new medical device may be introduced to the United States market, the manufacturer generally must obtain FDA clearance or approval through either the 510(k) pre-market notification process or the lengthier pre-market approval application "PMA" process. It generally takes from three to 12 months from submission to obtain 510(k) pre-market clearance, although it may take longer. Approval of a PMA could take four or more years from the time the process is initiated. The 510(k) and PMA processes can be expensive, uncertain and lengthy, and there is no guarantee of ultimate clearance or approval. We expect that some of our future products under development as well as Olympus-Cytori's will be subject to the lengthier PMA process. Securing FDA clearances and approvals may require the submission of extensive clinical data and supporting information to the FDA, and there can be no guarantee of ultimate clearance or approval. Failure to comply with applicable requirements can result in application integrity proceedings, fines, recalls or seizures of products, injunctions, civil penalties, total or partial suspensions of production, withdrawals of existing product approvals or clearances, refusals to approve or clear new applications or notifications and criminal prosecution.

Medical devices are also subject to post-market reporting requirements for deaths or serious injuries when the device may have caused or contributed to the death or serious injury, and for certain device malfunctions that would be likely to cause or contribute to a death or serious injury if the malfunction were to recur. If safety or effectiveness problems occur after the product reaches the market, the FDA may take steps to prevent or limit further marketing of the product. Additionally, the FDA actively enforces regulations prohibiting marketing and promotion of devices for indications or uses that have not been cleared or approved by the FDA.

Our current medical implants are at different stages of FDA review. We currently have 510(k) clearances for a wide variety of bioresorbable surgical implant products and we are constantly engaged in the process of obtaining additional clearances for new and existing products. There can be no guarantee that we will be able to obtain the necessary 510(k) clearances or PMA approvals to market and manufacture our other products in the United States for their intended use on a timely basis, if at all. Delays in receipt of or failure to receive such clearances or approvals, the loss of previously received clearances or approvals, or failure to comply with existing or future regulatory requirements could have a substantial negative effect on the results of our operations and financial condition.

To sell in international markets, we will be subject to intensive regulation in foreign countries

In cooperation with our distribution partners, we intend to market our current and future products both domestically and in many foreign markets. A number of risks are inherent in international transactions. In order for us to market our products in Europe, Canada, Japan and certain other non-U.S. jurisdictions, we need to obtain and maintain required regulatory approvals or clearances and must comply with extensive regulations regarding safety, manufacturing processes and quality. For example, we still have not obtained regulatory approval for our Thin Film products in Japan. These regulations, including the requirements for approvals or clearances to market, may differ from the FDA regulatory scheme. International sales also may be limited or disrupted by political instability, price controls, trade restrictions and changes in tariffs. Additionally, fluctuations in currency exchange rates may adversely affect demand for our products by increasing the price of our products in the currency of the countries in which the products are sold.

There can be no assurance that we will obtain regulatory approvals or clearances in all of the countries where we intend to market our products, or that we will not incur significant costs in obtaining or maintaining foreign regulatory approvals or clearances, or that we will be able to successfully commercialize current or future products in various foreign markets. Delays in receipt of approvals or clearances to market our products in foreign countries, failure to receive such approvals or clearances or the future loss of previously received approvals or clearances could have a substantial negative effect on the results of our operations and financial condition.

We depend on a few key officers

Our performance is substantially dependent on the performance of our executive officers and other key scientific staff, including Christopher J. Calhoun, our Chief Executive Officer, and Marc H. Hedrick, MD, our President. We rely upon them for strategic business decisions and guidance. We believe that our future success in developing marketable products and achieving a competitive position will depend in large part upon whether we can attract and retain additional qualified management and scientific personnel. Competition for such personnel is intense, and there can be no assurance that we will be able to continue to attract and retain such personnel. The loss of the services of one or more of our executive officers or key scientific staff or the inability to attract and retain additional personnel and develop expertise as needed could have a substantial negative effect on our results of operations and financial condition.

We may not have enough product liability insurance

The testing, manufacturing, marketing and sale of our regenerative cell and bioresorbable implant products involve an inherent risk that product liability claims will be asserted against us, our distribution partners or licensees. There can be no guarantee that our clinical trial and commercial product liability insurance is adequate or will continue to be available in sufficient amounts or at an acceptable cost, if at all. A product liability claim, product recall or other claim, as well as any claims for uninsured liabilities or in excess of insured liabilities, could have a substantial negative effect on the results of our operations and financial condition. Also, well-publicized claims could cause our stock to fall sharply, even before the merits of the claims are decided by a court.

Our charter documents contain anti-takeover provisions and we have adopted a Stockholder Rights Plan to prevent hostile takeovers

Our Amended and Restated Certificate of Incorporation and Bylaws contain certain provisions that could prevent or delay the acquisition of the Company by means of a tender offer, proxy contest or otherwise. They could discourage a third party from attempting to acquire control of the Company, even if such events would be beneficial to the interests of our stockholders. Such provisions may have the effect of delaying, deferring or preventing a change of control of the Company and consequently could adversely affect the market price of our shares. Also, in 2003 we adopted a Stockholder Rights Plan, of the kind often referred to as a poison pill. The purpose of the Stockholder Rights Plan is to prevent coercive takeover tactics that may otherwise be utilized in takeover attempts. The existence of such a rights plan may also prevent or delay the change in control of the Company which could adversely affect the market price of our shares.

We pay no dividends

We currently do not intend to pay any cash dividends for the foreseeable future.

USE OF PROCEEDS

We will receive no cash proceeds from this offering. The shares to be sold under this prospectus are being offered in consideration for certain amendments embodied in a September 26, 2006 amendment and restatement of our patent license agreement, originally dated October 16, 2001, with The Regents.

DILUTION

For purposes of determining the value of the non-cash consideration that we are receiving in this offering, we have valued the stock being offered at $4.87, or the "deemed offering price," which was the closing price for our common stock on the Nasdaq Global Market as of the date of this prospectus supplement. Using this value, an investment of our common stock in this offering will subject to dilution to the extent of the difference between the deemed offering price per share and the net tangible book value per share of our common stock after this offering. We calculate net tangible book value per share by dividing the net tangible book value, tangible assets less total liabilities, by the number of outstanding shares of our common stock.

Our net tangible book value at June 30, 2006, was $(24,295,000), or $(1.55) per share, based on 15,625,170 shares of our common stock outstanding as of that date. After giving effect to the sale of 100,000 shares of common stock by us at a deemed offering price of $4.87 per share, our net tangible book value as of June 30, 2006, would have been approximately $(23,808,000), or $(1.51) per share. This represents an immediate increase in the net tangible book value of approximately $.04 per share to existing stockholders and an immediate dilution of approximately $6.38 per share to investors in this offering. The following table (which takes no account of any other shares issued after June 30, 2006) illustrates this per share dilution:

Offering price per share		$ 4.87
Net tangible book value per share as of June 30, 2006	$ (1.55)	
Increase in net tangible book value per share after this offering	$ 0.04	
Net tangible book value per share after this offering		$ (1.51)
Dilution per share to new investors		$ 6.38

PLAN OF DISTRIBUTION

This offering is being made directly by us, without an underwriter or placement agent, to The Regents of the University of California (the "Regents"). We propose to sell the securities offered under this prospectus for non-cash consideration consisting of an amendment to certain terms to our patent license agreement with The Regents. Additional information regarding our agreement with The Regents and the amendment to this agreement can be found in our periodic reports filed with the U.S. Securities and Exchange Commission. (See "Incorporation of Certain Information by Reference.") The Regents may assign some of the securities to inventors of the underlying technology, including our president Marc Hedrick.

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

Our common stock is traded on the Nasdaq Global Market (formerly known as the Nasdaq National Market) and the Frankfurt Stock Exchange under the symbols "CYTX" and "XMPA", respectively.

LEGAL MATTERS

The validity of the common stock offered by this prospectus supplement has been passed upon for us by Heller Ehrman LLP, San Diego, California.

PROSPECTUS

$50,000,000

Common Stock

Preferred Stock

Depositary Shares

Warrants

We may offer and sell an indeterminate number of shares of our common stock, preferred stock, depositary 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 June 2, 2006, the last reported sale price of our common stock on the NASDAQ National Market was $8.00 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 June 5, 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, depositary shares and/or 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. 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 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.

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 pre-clinical 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.

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.

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 overallotments, 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.

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) Current Reports on Form 8-K, as filed on May 26, 2006 and May 31, 2006;

(4) The description of our common stock contained in our registration statement on Form 10/A, as filed on July 16, 2001;

(5) 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

(6) 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.

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.

100,000 Shares

Common Stock

PROSPECTUS SUPPLEMENT

September 26, 2006